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REFERENCE NO. 13

Presentation of the Phase I Sampling Plan Results for the Former Polychrome Corporation Facility in Yardville, New Jersey

ECRA Case No. 86122

Submitted to the
New Jersey Department of Environmental Protection
on behalf of
Polychrome Corporation

September 1988

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results from the soil and ground water sampling at the underground tank were submitted as an addendum on September 26, 1986.

The NJDEP assigned Case Manager, Michael Metlitz, requested a site inspection of the building interior, which occurred on February 3, 1987. The remainder of the property was inspected on March 3, 1987. The March 27, 1987 Report of Inspection from the NJDEP, which indicated a number of required actions, was followed by a June 10, 1987 letter to Carol Surgens, also of Lowenstein, Sandler et al., commenting on the July 15, 1986 Sampling Plan and restating the requirements in the Report of Inspection.

A Revised Sampling Plan, which was designed to determine the nature and extent of soil contamination[1] as requested in the Report of Inspection, was submitted on July 20, 1987, with an accompanying cover letter addressing issues raised by NJDEP correspondence of March 27 and June 10. The Revised Sampling Plan identified 14 areas of environmental concern (AECs) based on site history, results of the site inspections, and NJDEP comments. The locations of the AECs, which are briefly described in Table 2, are shown on Figure 1. Detailed descriptions of the AECs can be found in the Revised Sampling Plan, which was

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1 For this report, "contamination" is defined as concentrations of a particular substance exceeding informal NJDEP-established ECRA cleanup guidelines for soil or ground water (Table 1). ENVIRON is using these guidelines to simplify presentation and interpretation of sampling results and neither ENVIRON nor Polychrome suggests the cleanup guidelines are the appropriate basis for a site cleanup. For example, health and environmental risk analyses may prove more appropriate for determining cleanup levels.

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Table 1: ECRA Action Levels

Parameter	Soil	Ground Water
Total Petroleum Hydrocarbons (TPHCs)	100 ppm	1,000 ppb
Base/Neutral Extractables (BNs)	10 ppm	Case-by-case
Acid Extractables (AEs)	Case-by-case	Case-by-case
Volatile Organic Compounds (VOCs)	1 ppm	Case-by-case
Polychlorinated Biphenyls (PCBs)	1-5 ppm	0.001 ppb
Priority Pollutant Metals (PPMs)*		
Antimony	2 ppm	--
Arsenic	20 ppm	50 ppb
Beryllium	1 ppm	--
Cadmium	3 ppm	10 ppb
Chromium	100 ppm	50 ppb
Copper	170 ppm	1,000 ppb
Lead	250 ppm	50 ppb
Mercury	1 ppm	2 ppb
Nickel	100 ppm	--
Selenium	4 ppm	10 ppb
Silver	5 ppm	50 ppb
Thallium	5 ppm	--
Zinc	350 ppm	5,000 ppb
Cyanide	12 ppm	200 ppb
Phenols	Case-by-case	3,500 ppb

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* ECRA action levels for Priority Pollutant Metals in ground water are derived from NJAC 7:9-6.6

-- Indicates no cleanup guideline listed in NJAC 7:9-6.6

ppm parts per million (equivalent to mg/kg)

ppb parts per billion (equivalent to ug/l)

NOTE: ECRA cleanup guidelines which are taken from an NJDEP internal memorandum and communication with NJDEP personnel, are not established by administrative code.

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I. INTRODUCTION

A. History of ECRA Compliance

Polychrome Corporation ("Polychrome") entered into an Agreement of Sale with Herbert Krumsick on December 18, 1985 and shortly thereafter signed an Administrative Consent Order (ACO) that governs potential cleanup of its Yardville facility ("the site") under the Environmental Cleanup Responsibility Act (ECRA).

Polychrome submitted a General Information Submission (GIS) and a Site Evaluation Submission (SES) to the New Jersey Department of Environmental Protection (NJDEP) on February 18, 1986. A review of Polychrome's activities at this facility suggested that it was unnecessary to submit a sampling plan. NJDEP, however, following their review of the SES, required documentation of the integrity of the underground fuel oil storage tank. The subsequent Petro-Tite® test revealed the tank to be leaking. A monitoring well was installed in the presumed downgradient direction proximate to the tank which is situated partially below the water table. Soil samples were collected during the well installation, and a ground water sample was obtained after the well had been developed and had stabilized. In a May 5, 1986 letter to Edward Hogan, Esq. of Lowenstein, Sandler, et al. (counsel for Polychrome) NJDEP requested that a Sampling Plan be submitted to address potential contamination resulting from the underground tank. After subsequent discussions with NJDEP personnel regarding additional sampling requirements, a Sampling Plan was submitted on July 15, 1986. The

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Table 2: Areas of Environmental Concern

Area of Environmental Concern	Description
1	Soil in vicinity of dumpster which formerly contained PCB contaminated material (Spill #1 of Appendix 4).
2	Soil in vicinity of north edge of parking lot, in former disposal site of absorbent materials (Spill #2 of Appendix 4).
3	Soil adjacent to former drum storage pad and Spill #3 of Appendix 4.
4	Soil in vicinity of underground fuel oil storage tank (Spill #4 of Appendix 4).
5	Soil in vicinity of railroad tracks (Spill #6 of Appendix 4).
6	Soil in a circular zone of distressed vegetation north of the facility.
7	Soil adjacent to a trench located in the wooded area north of the facility.
8	Soil in area of distressed vegetation and debris in area bordering eastern edge of parking lot.
9	Soil in area of distressed vegetation adjacent to propane tanks.
10	Trench which runs along the southern end of the building.
11	Soil adjacent to water tank.
12	Sediments in the storm sewer catch basin.
13	Damaged pipe insulation in boiler room.
14	Sump located adjacent to transformer enclosure.
15	Small pit located in wooded portion of site.
16	Small pit located in wooded portion of site.

conditionally approved by NJDEP in a June 3, 1988 letter that identified two additional AECs. Implementation of this plan on August 1 and 2, 1988, involved the collection of a total of 30 soil samples from 12 borings and a storm sewer catch basin; one water sample from a sump; and two pipe insulation samples from the boiler room.

B. Purpose and Scope

In this report ENVIRON presents the results from implementation of the Revised Sampling Plan. The report discusses the methodologies used to collect samples, presents site-specific geological and analytical results of soil and water sampling, interprets these results in terms of ECRA action levels and, finally, recommends further action to satisfy ECRA requirements.

II. METHODOLOGY

A. Sample Collection

The sample collection techniques used at Polychrome were generally those proposed in the Revised Sampling Plan. As discussed below, field conditions necessitated several changes to the proposed sampling depths. Figure 1 is a site map showing the actual sampling locations, all of which were surveyed by James M. Stewart, Inc., licensed surveyors. Boring logs are presented in Attachment 1.

1. Soil Sampling from Hollow-Stem Auger Borings

The Revised Sampling Plan proposed a total of 15 hollow-stem auger borings in nine AECs. Except as noted below, ENVIRON installed and located these borings in accordance with the Revised Sampling Plan. Table 3 lists the sampling locations, actual sampling depths, and analyses performed for each soil sample. All borings were drilled by a licensed driller on the staff of J.E. Fritts & Associates, Inc., using a Dietrich D-25 truck-mounted skid rig. In some cases, the driller drove the split spoons to the maximum sampling depth (4 feet below ground surface) without the use of augers. These sampling locations, 901, 1001 and 1002, will still be referred to as hollow-stem auger borings in this report.

In general, ENVIRON planned to collect three samples from each boring, from three six-inch increments from the surface to the water

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Table 3: Actual Sampling in Areas of Environmental Concern

Areas of Environmental Concern	Sampling Location	Number and Type of Samples per Location	Analyses[1]
1	101	Hollow-Stem Auger Boring 3 soil samples • 2.0 - 3.0 feet • 5.0 - 5.5 feet	PP+40, TPHCs
2	201	Hollow-Stem Auger Boring 4 soil samples • 0 - 0.5 feet • 1.5 - 2.0 feet[2] • 3.0 - 3.5 feet • 5.0 - 6.0 feet	TPHCs, PCBs, VOC+15, BN+15, PPMs
3	301	Hollow-Stem Auger Boring 4 soil samples • 0 - 0.5 feet • 1.5 - 2.0 feet[2] • 2.5 - 3.0 feet • 5.5 - 6.0 feet	PP+40
5	501,502 503,504	Hollow-Stem Auger Borings 3 soil samples • 1.0 - 3.0 feet[3] • 3.0 - 4.5 feet[3] • 4.5 - 6.0 feet[3]	TPHCs, BN+15 PP+40[4]
8	801	Hollow-Stem Auger Boring 2 soil samples • 2.0 - 2.5 feet • 4.5 - 5.0 feet	PP+40
8	802	Hollow-Stem Auger Boring 1 soil sample • 2.5 - 3.0 feet	PP+40
9	901	Hollow-Stem Auger Boring 3 soil samples • 0.0 - 0.5 feet • 1.5 - 2.0 feet[2]	PP+40, TPHCs
10	1001, 1002	Hollow-Stem Auger Borings 2 soil samples • 2.5 - 3.5 feet[3] • 5.5 - 6.0 feet	PP+40, TPHCs

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Table 3: Actual Sampling in Areas of Environmental Concern (continued)

Areas of Environmental Concern	Sampling Location	Number and Type of Samples per Location	Analyses[1]
12	1201	Surface Soil Sample	PP+40, TPHCs
13	1301, 1302	Insulation Samples	Asbestos
14	1401	Surface Water Sample	PCBs, BN+15

1 PCBs - Polychlorinated biphenyls on the priority pollutant list
TPHCs - Total petroleum hydrocarbons
VOC+15 - Volatile organic chemicals on the priority pollutant list plus the next 15 highest peaks
PP+40 - Priority pollutants excluding the pesticides plus the next 40 highest peaks
BN+15 - Base neutral extractables on the priority pollutant list plus the next 15 highest peaks
PPMs - Metals on the priority pollutant list

2 Samples collected from this depth were analyzed for VOC+15. Soil samples from 0 to 0.5 feet were analyzed for all other parameters in that AEC.

3 Samples were collected from a six-inch increment within this interval. Actual sampling depths, which vary slightly from boring to boring, are presented in the boring logs.

4 Analyses for PP+40 were performed only on the uppermost samples from Borings 502, 503 and 504.

table. Borings that encountered the water table were plugged with cement grout; those that did not were plugged with the soil cuttings.

Changes to the Revised Sampling Plan required by field conditions were as follows:

- AEC 1 is located at a low point in the parking lot. Thus, when Boring 101 was installed, rainwater that infiltrated the stone fill layer below the asphalt had saturated underlying soils. When this stone layer was disrupted by the auger, water flowed into the boring, further saturating the underlying soils. Split-spoon samplers could not retain samples of this saturated silty clay. Soil samples were thus collected from the auger flights. The surface sample was eliminated because saturated conditions prevented its collection without surface water contamination.

- Slight alterations to the sampling depths in AEC 5 were necessary due to variations in the surface gravel fill thickness and the presence of water puddled at the base of this fill. At only one location, Boring 503, did these factors prevent the collection of a sample. Specific sampling depths can be found in the boring logs included as Attachment 1.

- Dense underbrush prevented the drill rig from reaching the sampling locations in AECs 6 and 7. ENVIRON thus planned to collect the soil samples from these areas, and from AECs 15 and 16, using hand augers. However, attempts to locate and collect soil samples from these vegetated areas of low relief were unsuccessful. Therefore, ENVIRON proposes to collect samples in these areas later in the year, after the underbrush has died and these features have become visible. When available, these results will be submitted as an addendum to this report.

- After completion of the field program, AnalytiKEM, the laboratory analyzing the samples, informed ENVIRON that the sample collected from the interval above the water table at Boring 802 was missing. As no visible evidence of contamination was noted during the sampling of AEC 8, ENVIRON did not attempt to recollect this sample. Analytical results from AEC 8, discussed later, indicate that no contamination is present in this area. Thus, this sample does not need to be collected again.

In granting conditional approval to the Revised Sampling Plan for this facility, NJDEP required that a number of additional sampling locations and analyses be included. Following the review of these requirements with Polychrome, ENVIRON outlined questions and requested clarification of several requirements in a July 11, 1988 letter to Mr. Kenneth Hart (Attachment 2). Mr. John DeFina responded to this letter, indicating that if ENVIRON believed the original goals of the Revised Sampling Plan could be achieved without implementing some of the NJDEP requirements, then ENVIRON should design the field program accordingly and outline the reasons for the design in this report. The NJDEP requirements that were not included in the sampling program, and the reasons why ENVIRON omitted them, are discussed below. All other requirements in the June 3, 1988 conditional approval letter were incorporated.

- NJDEP required two additional borings in the railroad siding north of the building beyond the extent of AEC 5. Only the portion of the railroad spur which borders the building was designated an AEC and this only because of Monsanto Company's former practice of waste oil disposal for weed control. Thus, ENVIRON did not believe that sampling beyond [redacted] of the AEC was necessary and did not [redacted]. Secondly, NJDEP requested that a soil sample be collected from each boring from a 6-inch interval across the water table. Since sampling soil from the saturated zone is inconsistent with NJDEP recommendations, ENVIRON did not collect samples from this interval. Instead, ENVIRON obtained soil samples from the 6-inch interval above the water table or above the confining silt layer.

- NJDEP required two monitoring wells downgradient of AEC 5. Because no sampling had yet been conducted to characterize soil quality in this AEC, monitoring wells were not believed to be appropriate at this time. Field observations suggested that subsurface contamination was not present and thus, monitoring wells were not installed. Furthermore, the two piezometers which ENVIRON indicated would be installed to determine the ground water flow direction were not installed, again because the need for ground water monitoring was thought to be minimal.

- NJDEP required that soil samples be collected from the two circular pits located in the wooded portion of the property. As described above, dense undergrowth prevented the location of these features. Soil samples will be collected from these pits at a later date.

2. Sediment Sampling

As proposed in the Revised Sampling Plan, one sediment sample was collected from the storm sewer catch basin (location 1201), using a trowel after the storm sewer grate had been lifted.

3. Surface Water Sampling

As proposed in the Revised Sampling Plan, one surface water sample was collected from a sump adjacent to the transformer enclosure (location 1401). A laboratory-prepared glass container was used to transfer water from the sump to the sample containers.

4. Insulation Sampling

Two pipe insulation samples were collected from the boiler room as proposed. On July 2, 1987, a representative of Kaselaan & D'Angelo Associates, Inc. collected two insulation samples from the most damaged areas of the pipe insulation.

B. Quality Assurance/Quality Control

1. Decontamination Procedures

After the installation of each boring in an AEC, the drill rig and all downhole equipment were steam cleaned before drilling another boring.

2. Wash Blanks, Trip Blanks, Duplicate Samples

To monitor the effectiveness of the decontamination procedures, a wash blank was collected each day and analyzed for all parameters for which samples were collected that day. A total of two soil wash blanks were collected and analyzed for PP+40 and TPHCs.

On days that samples were collected for VOC+15 analyses, a trip blank accompanied the sampling team during the sampling activity. A total of two trip blanks were collected and analyzed for VOC+15. To monitor the consistency of laboratory analytical procedures, duplicate samples were proposed for approximately every 20 samples. Hence, two TPHC and one PP+40 duplicate samples were proposed. Because the two-inch diameter split spoons which the driller provided did not permit the collection of sufficient soil volume for duplicate samples from the same depth interval for PP+40 analysis, ENVIRON planned to collect the PP+40 duplicate and the second TPHC duplicate from one of the hand auger borings within the wooded area. Since sampling could not be conducted there, these duplicate samples will be collected when samples are obtained from the wooded area.

C. Waste Containment and Disposal

Drill cuttings would have been contained only if field observations had suggested the presence of subsurface contamination significantly greater than the surficial contamination present in the AEC in which a given boring was drilled. Because none of the soil cuttings appeared to be contaminated, they were either used as backfill, if the water table was not encountered, or left on the surface.

D. Laboratory Methodology

AnalytiKEM, Inc. of Cherry Hill, New Jersey performed all analyses of the samples in accordance with the Revised Sampling Plan. Table 4

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Table 4: Analytical Methods

Parameter	Water	Soil
Total Petroleum Hydrocarbons	418.1	418.1[1]
Volatile Organic Compounds	624	SW846:8240
Base/Neutral Extractables	625	SW846:8270[2]
Acid Extractables	625	SW846:8270[2]
Pesticides/PCBs	608	8080
Cyanide	335	335
Phenols	420	420
Priority Pollutant Metals		
Antimony	204.1	7040
Arsenic	206.2	7070
Beryllium	210.1	7090
Cadmium	213.1	7130
Chromium	218.1	7190
Copper	220.1	7210
Lead	239.1	7420
Mercury	245.1	7470
Nickel	249.1	7520
Selenium	270.2	7740
Silver	272.1	7760
Thallium	279.1	7840
Zinc	289.1	7950

1 Following Soxhlet extraction.
2 Following extraction by EPA Method SW846:3550.

lists the USEPA methodologies used in analysis for each parameter. The analyses for VOCs and base/neutral organics (BNs) included a 15-compound library search to identify other organic compounds present in the sample. The analysis for acid extractable organics (AEs) included a similar 10-compound library search. When the laboratory chemist was confident in identifying a compound, the laboratory reported a full chemical name on the EPA/NIH/NBS Non-targetted Library Search summary sheet. If the chemist was not confident of the identity of a compound, the compound was reported as "unknown" or by generic chemical group (e.g., "alkenes"). Reported concentrations of tentatively identified compounds are estimates based on an assumed 1:1 response. Because actual responses vary, these estimates may be as much as 20 times higher or 5 times lower than the actual concentration.

E. Data Reporting

Tier II data packages including the original data and full laboratory documentation are being submitted with this report. These data are summarized in the text if a parameter, or group of parameters, was detected in a given AEC above applicable ECRA action levels.

III. GEOLOGICAL FINDINGS

A. Regional Geology and Setting

The Polychrome Corporation facility is located in the Coastal Plain Physiographic Province. Wisconsin-age stratified drift is the surficial deposit in this area. The Merchantville Clay formation underlies this, and, in turn, is underlain by the Magothy and Raritan Formations. Ground surface elevations typically range from 60 to 100 feet above mean sea level. Surface water drainage is generally to the northwest, by a stream partially following the railroad siding. The small stream discharges into Back Edges Brook to the north. This brook flows west to the Crosswicks Creek system which flows southwest into the Delaware River. Approximately half of the property has been developed for industrial use. The remainder is wooded, with dense undergrowth.

B. Site Geology

The predominant sediment types at this facility are an orange-brown silty clay, often with gray mottles and gravel or sand, and a medium to coarse sand with up to 50% subrounded gravel. The gravelly sand is frequently interbedded with minor beds of fine silty sand. At several locations, black clay and peat were encountered at depths greater than five feet. Geologic logs for the 12 borings installed at the site are provided in Attachment 1.

IV. ANALYTICAL RESULTS AND DISCUSSION

A. Overview

The results of this sampling program indicate that in four AECs -- 3, 8, 9 and 14 -- no contamination is present. In AEC 5, while contamination was identified, it is at concentrations only slightly above ECRA action levels. In two of the remaining AECs -- 2 and 12 -- the sample results delineated the extent of contamination sufficiently to define the area potentially requiring remediation. Lastly, in AECs 1 and 10 the results, while not sufficient to delineate totally the horizontal and vertical extent of contamination, do provide a more precise understanding of contamination present and suggest direction for future actions.

Following this overview, detailed summaries of the results for each AEC are presented. For the following discussion, concentrations of the analytical parameters will be presented in terms of their relation to the ECRA action levels presented in Table 2. However, ENVIRON wishes to emphasize that these levels are informal and actual cleanup levels are determined on a case-by-case basis. Figure 2 presents summarized results for those sampling intervals in which at least one parameter was identified above ECRA action levels. A summary of the results is as follows:

- Pesticides were not detected in any sample.
- No contaminants were detected in the surface water sample collected from the sump in AEC 14.

- Base/Neutral extractable organic compounds (BNs) were locally present above ECRA action levels in one surface soil sample and in the storm water sewer sediments.
- Volatile organic compounds (VOCs) were also locally present above ECRA action levels, in one sample from the interior trench in AEC 10, and from a subsurface sample from AEC 2.
- Acid extractable organic compounds (AEs) and phenols were detected in the upper soil samples from AEC 10. There are no ECRA action levels to which to compare these results.
- Polychlorinated biphenyls (PCBs) were detected at concentrations above the 5 ppm ECRA action level in the upper soil samples from AEC 10, and above the 1 ppm ECRA action level in one of the two deeper samples from this AEC. PCBs were not detected in any other AEC.
- Arsenic (As) was found in two soil samples, and cadmium (Cd) in nine soil samples, at concentrations above ECRA action levels. No other Priority Pollutant metals were found at concentrations above ECRA action level.
- Total Petroleum Hydrocarbons (TPHCs) were identified in seven soil samples above the ECRA action level. In six of these samples, Cd was also present above the action level.
- VOCs, ABNs, TPHCs, cyanide, pesticides, or PCBs were not detected in either of the two wash blanks. Zinc was detected in both wash blanks, and nickel in one wash blank, but at concentrations well below ECRA action levels.
- No VOCs were detected in the trip blank.

B. Summaries of Soil Results for Each AEC

1. AEC 1

Two soil samples were collected from the soil surface and from above the water table from the boring installed adjacent to the cement pad in AEC 1. Both samples were analyzed for TPHCs and PP+40. No VOCs, AEs, BNs, PCBs, cyanide or phenolics were detected in either sample. TPHCs and cadmium were identified above ECRA action levels in both samples. All remaining PPMs were either not detected or detected at concentrations below ECRA action levels. Table 5 provides the concentrations of all parameters found above ECRA action levels in AEC 1.

These results suggest that the soil in this area was not impacted by any potential spills or leakage from the PCB-contaminated material that, as described in the SES, was at one time found in the dumpster formerly stored in this area. The results also indicate that limited remediation, if any, may be necessary in AEC 1.

Although the TPHC and cadmium concentrations were above the ECRA action levels to a depth of 5.5 feet, it is likely that the saturated conditions introduced some error to these results. The storm water present beneath the pavement would tend to introduce surficial contaminants into the underlying soils. Furthermore, the collection method for these samples, i.e., collecting saturated soil

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Table 5: Parameters Detected Above ECRA Action Levels in Boring 101

Parameter: TPHCs — ECRA Action Level: 100 ppm

Depth	Concentration
2.0	720
5.0	380

Parameter: Cadmium — ECRA Action Level: 3 ppm

Depth	Concentration
2.0	10
5.0	13

Notes:
Underlined concentrations are above ECRA action levels. "ND" indicates that a compound was not detected above the method detection limit.

that adhered to the auger flights, may have affected the results. Samples collected in this fashion are not necessarily representative of a discrete depth interval because the auger tends to mix soil and contaminants from one depth to another as it advances in the borehole.

The pattern of contamination in AEC 1 suggests that surficial contamination may have been transported into the borehole by the confined surface water, causing the soil adhering to the auger flight to become contaminated. Additional sampling is necessary to verify the vertical extent of contamination and to determine the lateral distribution of these contaminants before addressing the need for soil remediation. This sampling is proposed in Section V.

2. AEC 2

Three soil samples were collected from the ground surface to the water table in one borehole in this AEC and analyzed for TPHCs, VOC+15, BN+15, PPMs and PCBs. PCBs were not detected in any soil sample. TPHCs and all of the PPMs were either not detected or detected at concentrations well below ECRA action levels. BNs in the surface sample and VOCs in the 3-foot sample were found above ECRA action levels. The concentrations of these parameters in all of the samples from AEC 2 are provided in Table 6.

Sampling was conducted in this area to verify that a previous spill had been successfully remediated. The data suggests that

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Table 6: Parameters Detected Above ECRA Action Levels in Boring 201

Parameter: BNs	ECRA Action Level: 10 ppm
Depth	Concentration
0.0	126 [1]
3.0	ND
5.5	ND

Parameter: VOCs	ECRA Action Level: 1 ppm
Depth	Concentration
1.5	.42
3.0	4.4 [2]
5.5	.84

Notes:

Underlined concentrations are above ECRA action levels. "ND" indicates that a compound was not detected above the method detection limit.

1 This includes 120 ppm of bis-(2-ethylhexyl) phthalate.

2 The specific compounds are toluene at 3.6 ppm and methylene chloride at .8 ppm.

contamination, possibly from this spill, is present and that additional remediation may be necessary. This remediation is proposed in Section V.

3. AEC 3

The three soil samples collected in AEC 3 were analyzed for TPHCs and PP+40. No parameter was detected above ECRA action levels. Thus, the prior remedial actions in this area were effective in remediating the spill that was described in the SES. No further action is necessary in this area.

4. AEC 5

Four borings were drilled along the railroad siding in this AEC. Three soil samples were obtained from each of three locations. Only two soil samples were collected from the fourth boring. All samples were analyzed for TPHCs and BTEX. In addition, three of the four surface samples were analyzed for PP+40. BTEX, VOCs, BNs, AEs and PCBs were not present in any sample. Cyanide was present below the ECRA action level in three surface samples while phenolics were present in only one sample, at a concentration of 550 parts per billion (ppb). TPHCs were found above the ECRA action level in two of the surface samples. The only Priority Pollutant metals that were detected above ECRA action levels were cadmium and arsenic in several surface samples. Table 7 provides the concentrations of those parameters which exceeded these action levels.

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Table 7: Parameters Detected Above ECRA Action Levels in AEC 5 [1]

Parameter: TPHCs	ECRA Action Level: 100 ppm
Sampling Location and Depth	Concentration
Boring 501	
1.5	ND
3.0	ND
4.5	29
Boring 502	
1.5	240
3.0	ND
5.0	ND
Boring 503	
2.5	ND
5.5	ND
Boring 504	
2.5	330
4.0	ND
5.5	ND

Parameter: Cadmium	ECRA Action Level: 3 ppm
Sampling Location and Depth	Concentration
Boring 501	
1.5	NR
3.0	NR
4.5	NR
Boring 502	
1.0	17
3.0	NR
5.0	NR

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Table 7: Parameters Detected Above ECRA Action Levels in AEC 5 [1]
(continued)

Parameter: Cadmium — ECRA Action Level: 3 ppm

Sampling Location and Depth	Concentration
Boring 503	
2.0	12
5.5	NR
Boring 504	
2.0	8.4
4.0	NR
5.5	NR

Notes:
Underlined concentrations are above ECRA action levels. "ND" indicates that a compound was not detected above the method detection limit. "NR" indicates that an analysis for a particulate parameter was not requested for this sample.

1 In addition to these parameters, arsenic was identified in the surface sample from **Boring 503** at a concentration of **44 ppm.** This was the only sample from AEC 5 which exceeded the ECRA action level of 20 ppm for [redacted].

The primary reasons for designating this active railroad siding an AEC were to determine the potential impact on soil quality from Monsanto's former practice of disposing of waste oil along the siding for weed control and to verify that prior remedial actions were effective. The recent sampling results suggest that most of the contamination potentially resulting from this former waste oil disposal has been remediated and that subsurface soils were not significantly impacted by the waste oil disposal. ENVIRON believes that the data gathered from this sampling program sufficiently characterize the type and extent of contamination in this AEC to address the potential need for remediation and ground water monitoring.

Since Polychrome relocated to its new facility, the current tenants have substantially increased the usage of this railroad siding. The low levels of the contaminants now present in this area--TPHCs, cadmium and arsenic--are confined to the surface. TPHC concentration are below method detection limits in three of the four subsurface samples. Thus, the presence of these contaminants can be attributed to, in part, activities related to the increased number of trains that now use this siding. These contaminants are also not related to Polychrome operations. For these reasons, and because the low contaminant levels are associated with a railroad siding that is currently in use, no remediation is believed to be necessary.

These sampling results also demonstrate that there is no need for ground water monitoring in AEC 5. TPHCs were not detected in any sample below the surface at concentrations exceeding ECRA action levels, and were not detected in three of the four deep samples. It is clear that waste oil disposal activities did not adversely impact subsurface soil quality, and thus, it is not likely that ground water quality would be affected.

5. AEC 8

Two borings were drilled in this AEC. Two soil samples were collected from the ground surface and from the interval directly above the water table. Three of these samples were analyzed for PP+40. No parameter was identified at concentrations exceeding ECRA action levels in any soil sample. As previously described in Section II.A.1., the deeper sample from boring 802 was lost.

The data obtained from these three soil samples are sufficient to conclude that the debris disposal noted in this area by NJDEP during the April, 1987 site inspection apparently has not impacted the soil quality in this AEC. Thus, no further characterization of this area is necessary.

6. AEC 9

The two soil samples collected from the one boring installed in this AEC were analyzed for PP+40. No parameter was detected above ECRA action levels. Thus, the small areas of distressed grass that comprise this AEC were caused not by material spillage, but more likely by the storage of equipment which restricted sunlight and water from reaching these areas. No additional characterization of this area is needed.

7. AEC 10

Two borings were installed through the concrete lining in the bottom of the trench in AEC 10. Soil samples were collected from the intervals immediately below the concrete and from directly above the water table. All four soil samples were analyzed for TPHCs and PP+40. BNs, pesticides and cyanide were not detected above ECRA action levels in any sample. VOCs, TPHCs, PCBs, cadmium and arsenic were identified in one or more samples at concentrations in excess of ECRA action levels. Table 8 provides the concentrations of these parameters in each soil sample from AEC 10. VOCs and arsenic were detected above ECRA action levels in only one sample each. TPHCs were detected above ECRA action levels only in the surface samples and were not detected in the deeper samples. PCBs and cadmium were found above the action level in both surface samples and in the same deep sample. PCB concentrations decreased significantly with depth.

Concentrations of AEs and phenolics were not included in Table 8 because there are no ECRA action levels for these contaminants. Both parameters were detected in both surface samples, and phenolics were identified in one of the deep samples. The concentrations of AEs ranged from none detected to 6.0 ppm, while the concentrations of phenolics were between 1.3 and 450 ppm. The concentrations of both parameters decreased markedly with depth.

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Table 8: Parameters Detected Above ECRA Action Levels in AEC 10

Parameter: TPHCs	ECRA Action Level: 100 ppm
Sampling Location and Depth	Concentration
Boring 1001	
2.5	4,500
5.5	ND
Boring 1002	
3.1	2,700
5.5	ND

Parameter: PCBs	ECRA Action Level: 1 to 5 ppm
Sampling Location and Depth	Concentration
Boring 1001	
2.5	79 1
5.5	.66
Boring 1002	
3.1	6.6
5.5	1.8

Parameter: VOCs	ECRA Action Level: 1 ppm
Sampling Location and Depth	Concentration
Boring 1001	
2.5	15 2
5.5	.83
Boring 1002	
3.1	ND
5.5	ND

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Table 8: Parameters Detected Above ECRA Action Levels in AEC 10 (cont'd.)

Parameter: Cadmium — ECRA Action Level: 3 ppm

Sampling Location and Depth	Concentration
Boring 1001	
2.5	ND
5.5	11
Boring 1002	
3.1	6
5.5	26

Parameter: Arsenic — ECRA Action Level: 20 ppm

Sampling Location and Depth	Concentration
Boring 1001	
2.5	3.8
5.5	14
Boring 1002	
3.1	3.6
5.5	46

Notes:
Underlined concentrations are above ECRA action levels. "ND" indicates that a compound was not detected above the method detection limit.

1 All PCBs in this AEC were identified as Aroclor 1242.

2 The specific compounds are 1,1,1-Trichloroethane and Tetrachloroethylene.

The sampling results for AEC 10 describe the pattern of contamination sufficiently to determine the need for further actions in this area. Contaminant levels sharply decreased with depth, often decreasing to below action levels. In particular, TPHCs and VOCs were found above ECRA action levels only in surface samples. Similarly, AEs were only detected in the surface samples and the concentrations of phenolics dropped sharply with depth. Furthermore, organic contaminant levels were higher at Boring 1001, the location more upgradient of the former cooling water circulation equipment still present near the eastern corner of the building. This suggests that contaminant levels may continue to decrease approaching the circulation equipment. Lastly, the sampling conducted in AEC 5 demonstrates that any contamination present in the trench was contained within the building as no VOCs, PCBs or AEs were detected in any sample from AEC 5.

8. AEC 12

One sediment sample was collected from the storm sewer in this AEC and analyzed for TPHC and PP+40. TPHCs, BNs and cadmium were detected at concentrations exceeding ECRA action levels. VOCs, AEs, PCBs, pesticides and cyanide were not detected in this sample. Phenolics were detected at a low concentration of 420 ppb. All remaining PPMs were either not detected or detected at concentrations below ECRA action levels. The material present in this storm sewer will be remediated concurrently with the contaminated soil in AECs 2, 4 and 11.

9. AEC 13

Two insulation samples were collected from two of the damaged areas of pipe insulation in the boiler room. These samples were analyzed for asbestos content by Kaselaan & D'Angelo Associates, Inc., and found to contain 40% to 55% chrysotile asbestos. The laboratory report of these analyses is provided as Attachment 4. Because the damaged areas of the insulation are small, repair is preferable to removal. This repair will be conducted by a licensed contractor, and all pertinent documentation will be submitted to the NJDEP.

C. Conclusions

The 1988 sampling program, and the extensive analyses conducted on the majority of soil samples, nearly fully characterized the potential impact of industrial activities on soil quality. The results provide ample direction for additional sampling and remediation, and for designating those areas which no longer need to be addressed. Specifically:

- Contaminant levels in AECs 3, 8, 9, and 14 were below ECRA action levels, indicating both that these areas need not be included in any future site characterization and that remediation of them is unnecessary. In addition, contaminant levels in AEC 5 were minimally above ECRA cleanup guidelines only at several surface locations. Because these levels are only slightly above ECRA action levels and are confined to the surface, and because the railroad siding is currently in use, no remediation is believed to be necessary.

- Pesticides were not detected in any soil sample and need not be included in future sampling programs at this site.

- Similarly, cyanide was not detected above ECRA action levels in any sample and need not be included in future sampling programs at this site.

- BNs were not detected above ECRA action levels in any AEC in which additional sampling is necessary; and both areas in which BNs were detected above the ECRA action level will be remediated. Thus, BNs need not be included in any future characterization of other areas.

- Similarly, AEs and phenolics were detected only in AEC 10. Therefore, analyses for these parameters will not be necessary in future characterization of areas outside of AEC 10.

- The PCBs detected in AEC 10 were identified as Aroclor 1242, the same congener identified in the former dumpster in AEC 1. Hence, it is probable that the PCBs present in this trench resulted from activities during Monsanto's occupancy. PCBs were not detected in any sample from AECs 1, 2, 3, 5, 8, 9 and 12.

- The pattern of TPHC and cadmium contamination identified in AECs 1, 5, 10 and 12 strongly suggests a single source for these contaminants which may be related to previous site activities. TPHCs were detected above the ECRA action level in seven samples from these four AECs. Cadmium was identified exceeding the ECRA action level in six of these seven samples, and in three other sample from AECs 5 and 10. TPHCs and cadmium were not found to exceed ECRA action levels in any other AEC, suggesting that the TPHC and cadmium contamination resulted from a single source. Available information regarding previous site activities by Monsanto Company supports this conclusion. AEC 10 is the only AEC at this facility that was an active part of the Monsanto's manufacturing processes. (Polychrome did not conduct manufacturing operations at this facility.) Thus, if any contamination were associated with Monsanto's processes, it would be expected to most significantly impact AEC 10. The fact that TPHC and cadmium concentrations are highest in AEC 10 seems to corroborate this assumption.

  One potential source of the TPHCs and cadmium in AEC 10 is waste oil from machinery. Used oil has been determined to contain cadmium at concentrations of up to 57 ppm, most likely as an additive or from engine wear.[1] This same study, in which over 1000 used oil samples were analyzed, also found

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1 <u>Composition and Management of Used Oil Generated in the United States</u>, Franklin Associates Ltd., USEPA, November 1984, p. 1-12.

arsenic, PCBs, 1,1,1-Trichloroethane, tetrachloroethylene, and phenolic compounds as common constituents in used oil. The study concluded that these parameters were either present as additives or contaminants, or were products of engine wear. All of these parameters were identified above ECRA action levels in at least one of the soil samples from AEC 10. The identification of minimal TPHC and cadmium contamination in AEC 5, an area of known waste oil disposal, could also have resulted if contaminated waste oil were disposed of on the railroad siding. It should be noted that although prior waste oil disposal practices may have resulted in a portion of the contamination detected in AEC 5, because this contamination is insignificantly above ECRA action levels and because the railroad siding is active, no remediation is believed to be appropriate.

The contamination detected in AEC 1 may be similarly explained. It is possible that Monsanto also disposed of waste oil-contaminated material in this dumpster. Potential leakage from this dumpster may thus have resulted in the TPHC and cadmium contamination recently identified. If this dumpster did leak, stormwater runoff may have transported some of this leakage into the sewer sediments in AEC 12. It should be noted that although PCBs were detected in sorbent material in this dumpster in 1982, analyses for PCBs on soil samples from AECs 1, 2, 3, 5, 8, 9 and 12 clearly demonstrate that the PCBs formerly present in the dumpster did not impact any AEC at this facility.

ENVIRON believes that the pattern of TPHC and cadmium contamination, information on previous Monsanto operations at this facility and information on common contaminants of used oil support the conclusion that these contaminants were associated with waste oil handling procedures during Monsanto's occupancy of this site.

- ENVIRON believes that the pattern of contamination in AEC 10 indicates that ground water monitoring is unnecessary. Concentrations of organic contaminants decrease markedly with depth, usually to below ECRA action levels and/or method detection limits. This demonstrates that contaminants are not significantly migrating. One reason for this is that AEC 10, and much of the surrounding area, are covered by the building which prevents rainwater infiltration. Polychrome believes that the appropriate remedial option for the soil contamination in AEC 10 is to fill the trench with concrete to prevent future disturbance of the underlying soil.

- The sampling results from August, 1988 provide sufficient information regarding soil contamination at this facility to limit the analyses proposed in AECs 6 and 7, and the analyses required by NJDEP in AECs 15 and 16. Originally, analyses for PP+40 were proposed or required for soil samples to be collected from AECs 6, 7, 15 and 16. Since no PCBs, AEs and pesticides were identified in any exterior sample, they need not be included as parameters in the analyses for these four AECs. Furthermore, cyanide was not detected above the ECRA action level in any sample. Lastly, phenolics, while detected in two soil samples, were identified at insignificant concentrations. Hence, the analytical parameters proposed in AECs 6, 7, 15, and 16 can be limited to those found above ECRA action levels in exterior samples, namely, TPHCs, BNs, VOCs and PPMs.

V. ADDITIONAL SAMPLING AND PROPOSED REMEDIATION

A. Additional Sampling

Sampling is necessary in AEC 1 to delineate more fully the lateral extent of the TPHC and cadmium contamination. ENVIRON proposes to install four hollow-stem auger borings proximate to and downgradient of the cement pad near AEC 1. Table 9 summarizes proposed sampling depths and analyses. Soil samples will be collected from each boring at three intervals: the soil surface, the water table, and an intermediate depth. All soil samples will be analyzed for TPHCs and cadmium.

B. Proposed Remediation

Remediation is proposed in three areas of the facility. Sampling data suggest that the contamination in AEC 2, is confined to the upper four feet of soil. Thus, the upper five feet of soil, which includes a vertical buffer of one foot, will be excavated and staged on plastic sheeting on the pavement and covered with plastic sheeting. Once this soil has been removed, five post-excavation samples will be collected, one from the excavation floor and the remaining four from the sidewalls. Sampling locations and the proposed extent of excavation are illustrated on Figure 3, while the proposed analyses are provided in Table 9. The floor sample will be analyzed for VOCs, the only contaminant found at depth. The four sidewall samples will be analyzed for BNs, the only surficial contaminant in this AEC. As proposed for AEC 2, the data obtained from these samples will be used to determine the need for additional excavation.

Table 9: Proposed Phase II and Post-Excavation Sampling and Analyses

AEC	Sampling Location	Number and Type of Samples per Location	Analytical Parameters
1	102, 103 104, 105	Hollow-Stem Auger Boring 3 Soil Samples • 0.5-1.0 feet • 2.5-3.0 feet • 5.5-6.0 feet	TPHCs, Cd
2	202	Soil Sample • 5.5-6.0 feet	VOCs
2	203, 204, 205, 206	Soil Samples • 0.5-1.0 feet	BNs
4	402	Soil Sample • 5.0-5.5 feet	TPHCs
4	403, 404, 405, 406	Soil Samples • 0.5-1.0 feet	TPHCs
11	1101	Soil Sample • 0.5-1.0 feet	TPHCs
11	1102	Soil Sample • 2.0-2.5 feet	TPHCs

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ECRA Case No. 86122

The small surficial staining in AEC 11, shown on Figure 3, and the TPHC-contaminated soil in AEC 4 will also be removed at this time. AEC 11 is a small discolored gravel area proximate to an aboveground fuel oil tank near the water tank in the northern portion of the site. This discoloration was noted in the March 27, 1987 Report of Inspection as an area requiring remediation. The NJDEP required in the June 3, 1988 letter granting approval to the Phase I Sampling Plan that post-excavation samples be collected following remediation of this area. Given the small size of the discolored area in AEC 11, only two post-excavation samples will be collected, one from the floor and one from a sidewall. Both samples will be analyzed for TPHCs. Five post-excavation samples will be collected from the excavation in AEC 4 and analyzed for TPHCs.

The sediments present in the storm water sewer will be removed at this time. As this basin is concrete-lined, no post-remediation samples are necessary.

C. Implementation Costs

Approximately [redacted] of contaminated soil will be removed from AECs 2, 4, 11, and 12. It is anticipated that this soil will be disposed of either at the GROWS Landfill in Morrisville, Pennsylvania or at the Waste Conversion facility in Hatfield, Pennsylvania. The approximate cost per cubic yard for soil disposal at these facilities is $180. The estimated disposal cost for this [redacted] is [redacted].

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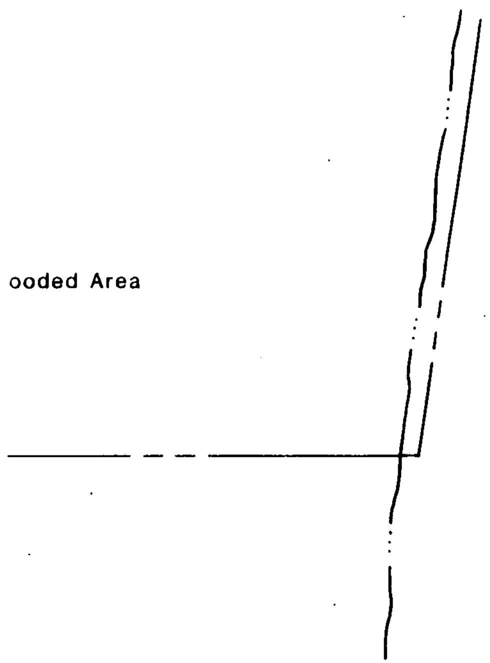
Polychrome will retain NEPCCO to perform the excavations in AECs 2, 4, 11, and 12. It is anticipated that the excavations can be completed in one day. The cost for the necessary equipment and personnel from NEPCCO will be approximately **$2,000**, including transportation of the excavated soil to the disposal site.

Following the completion of the excavations, 12 post-excavation samples will be collected and analyzed for the parameters previously described. These samples will be analyzed by AnalytiKEM at an estimated cost of $2,600.

ENVIRON will be present during the implementation of this Cleanup Plan to direct the remedial activities and to collect the **post-excavation samples**. The estimated cost of this is **$700**.

The total estimated cost of this Cleanup Plan, **$11,600**, will increase if results of the post-excavation samples indicate that additional soil needs to be excavated. A contingency of 20% has thus been added to cover this additional excavation, resulting in a final estimate of **$13,[illegible].**

1297f



Area of Environmental Concern

Monitoring Well

Hollow Stem Auger Boring

Surface Water Sample

Grab Sample

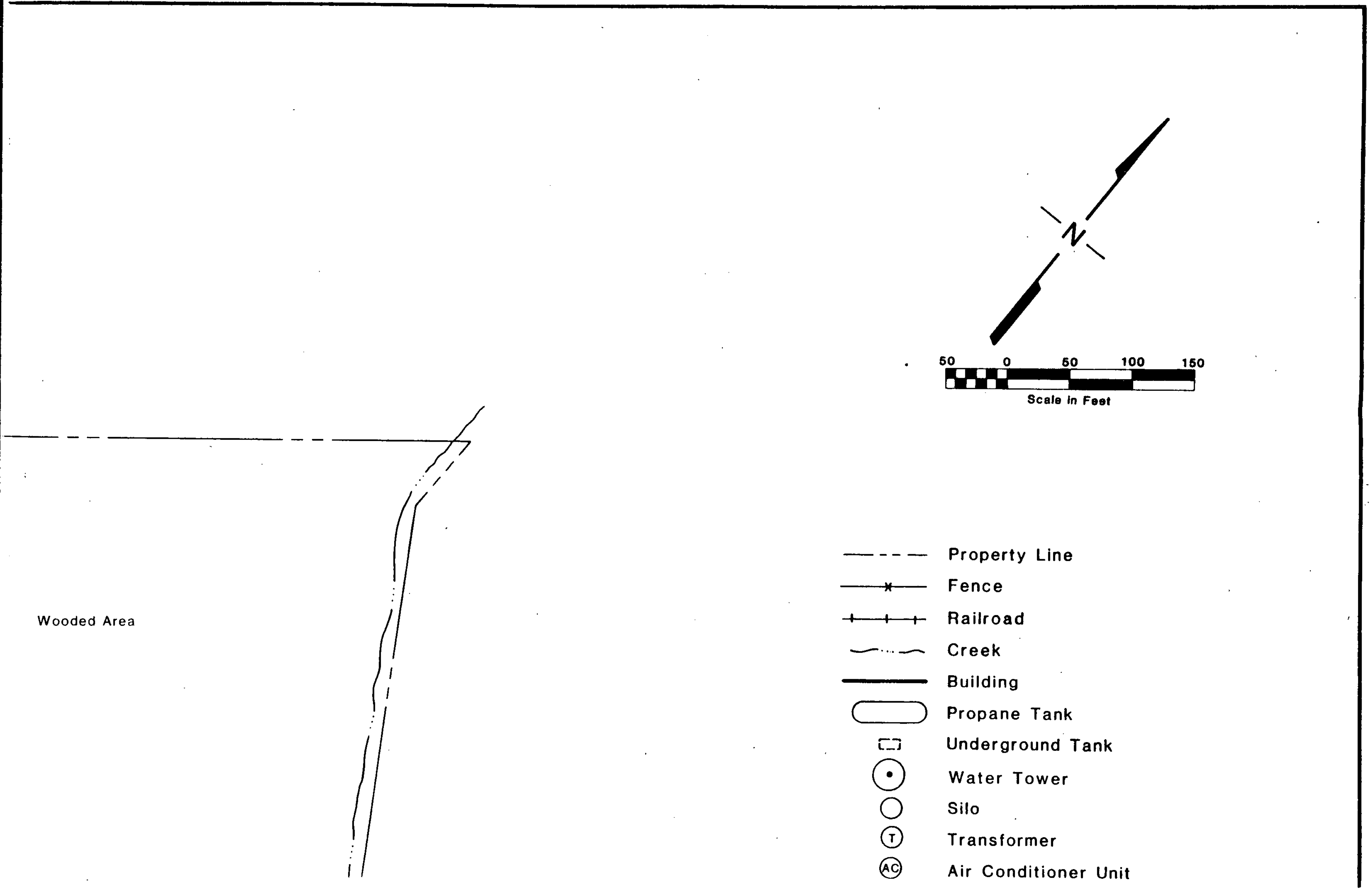
ENVIRON

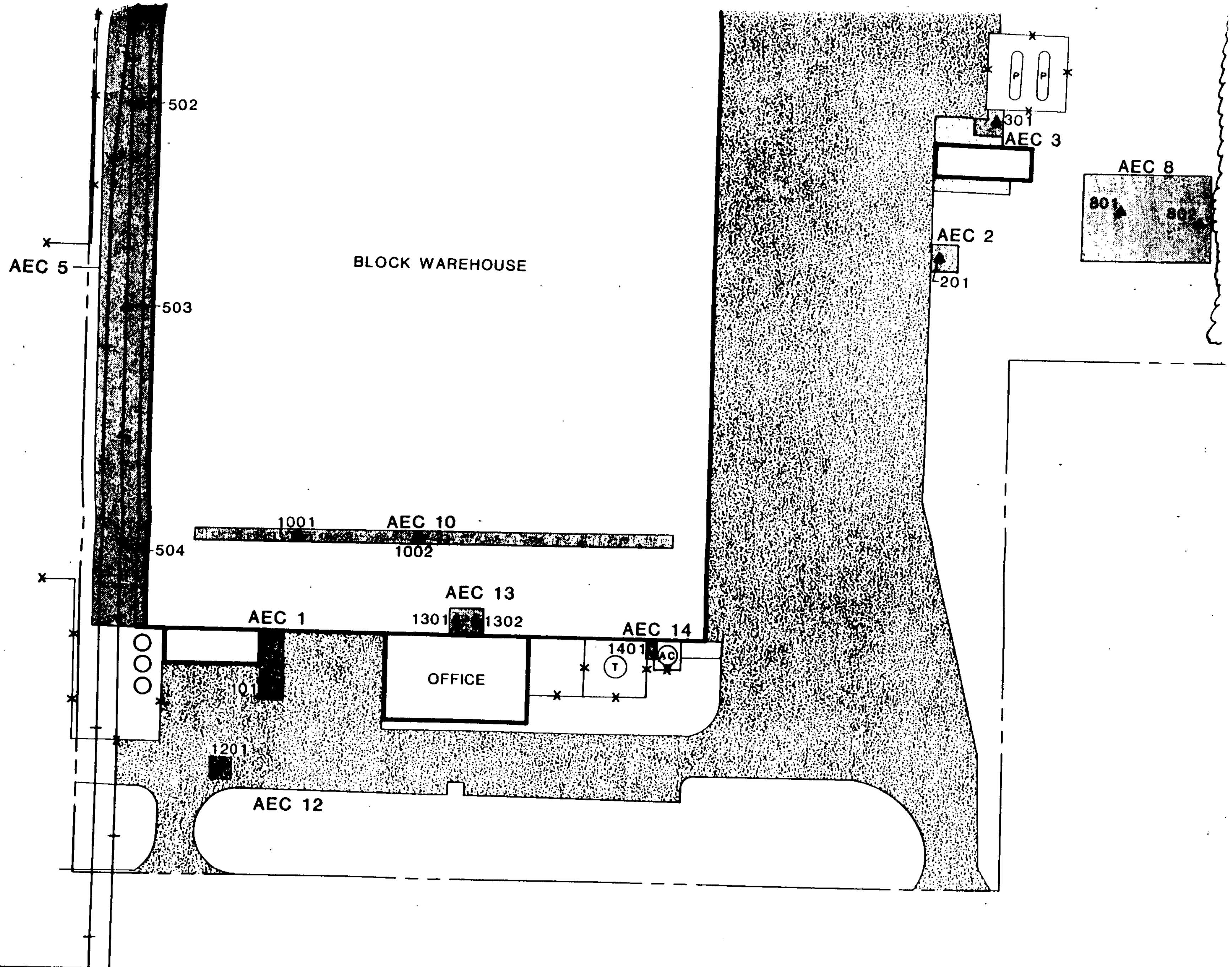
210 CARNEGIE CENTER, SUITE 201, PRINCETON, N.J. 08540
1000 POTOMAC ST., N.W. WASHINGTON D.C. 20007

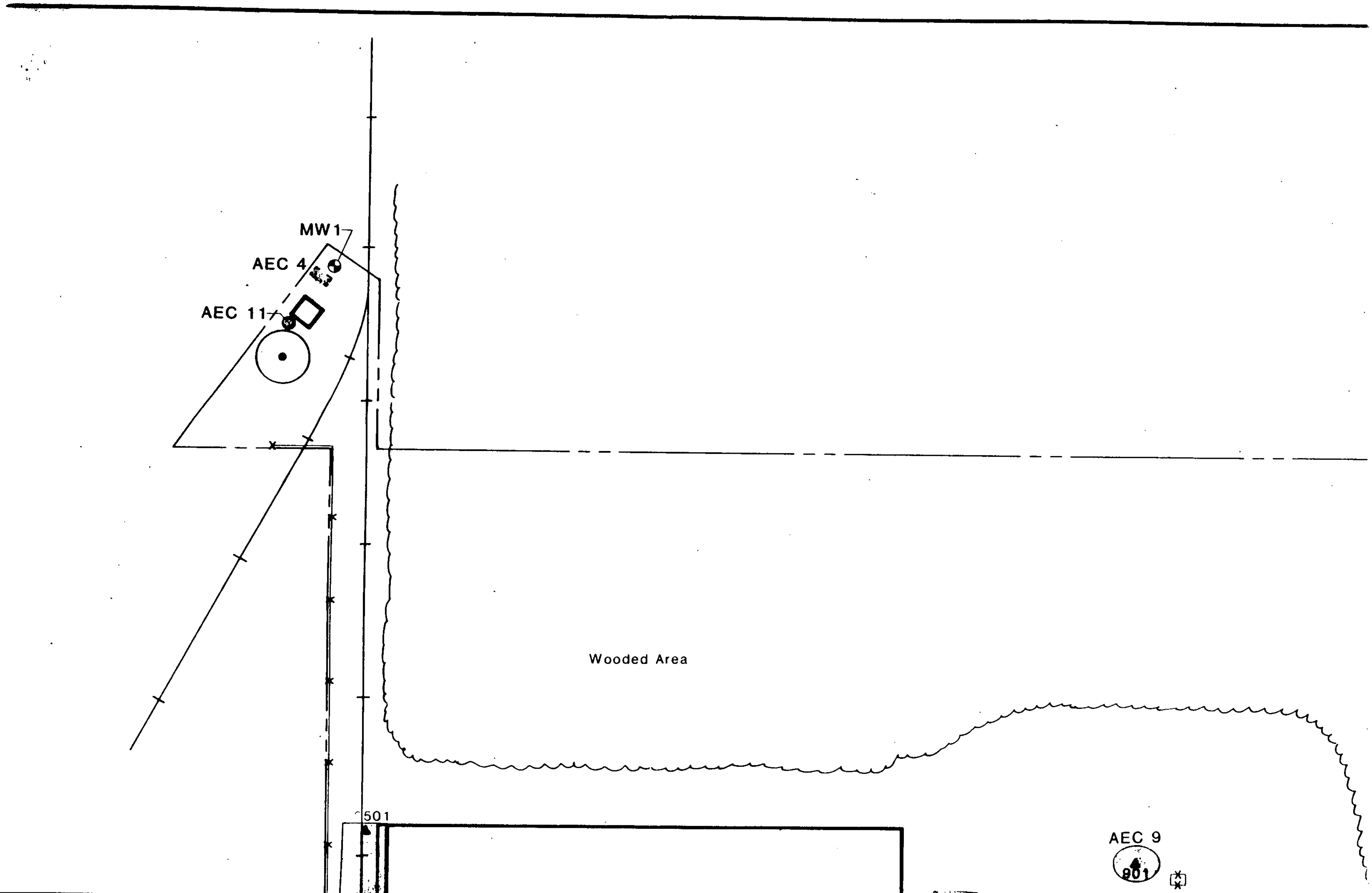
FIGURE 1
AREAS OF ENVIRONMENTAL CONCERN
AND ACTUAL SAMPLING LOCATIONS

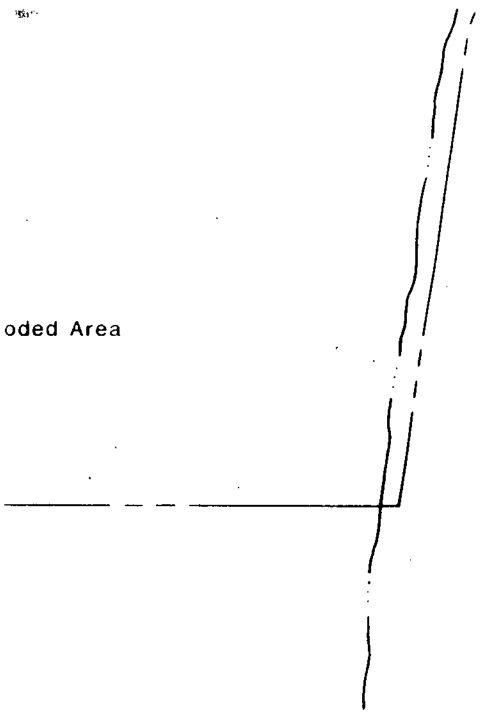
Polychrome Corp.
Yardville, New Jersey

DATE July, 1987.	DRAFTED BY C. Gwynn CHECKED BY B. Kraft
Revised: September 1988.	


Wooded Area
N
50
0
50
100
150
Scale in Feet
Property Line
Fence
Railroad
Creek
Building
Propane Tank
Underground Tank
Water Tower
Silo
T
Transformer
AC
Air Conditioner Unit


BLOCK WAREHOUSE
AEC 5
502
503
504
AEC 10
1001
1002
AEC 13
1301
1302
AEC 1
101
AEC 14
1401
T
AC
OFFICE
1201
AEC 12
AEC 3
301
P
P
AEC 2
201
AEC 8
801
802


MW1
AEC 4
AEC 11
Wooded Area
501
AEC 9
901



Asphalt Paved Area

Concrete Paved Area

Area of Environmental Concern

Monitoring Well

Hollow Stem Auger Boring

Surface Water Sample

Grab Sample

Notes: All Concentrations are in parts per million (ppm).

Only those depth intervals in which at least one parameter was detected above ECRA action levels are included on this figure.

Concentrations of AEs and Phenolics are provided even though there are no ECRA action levels which to compare these results.

Depths, in feet below ground surface, are provided above the concentrations.

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FIGURE 2

CONCENTRATIONS OF CONTAMINANTS EXCEEDING ECRA ACTION LEVELS

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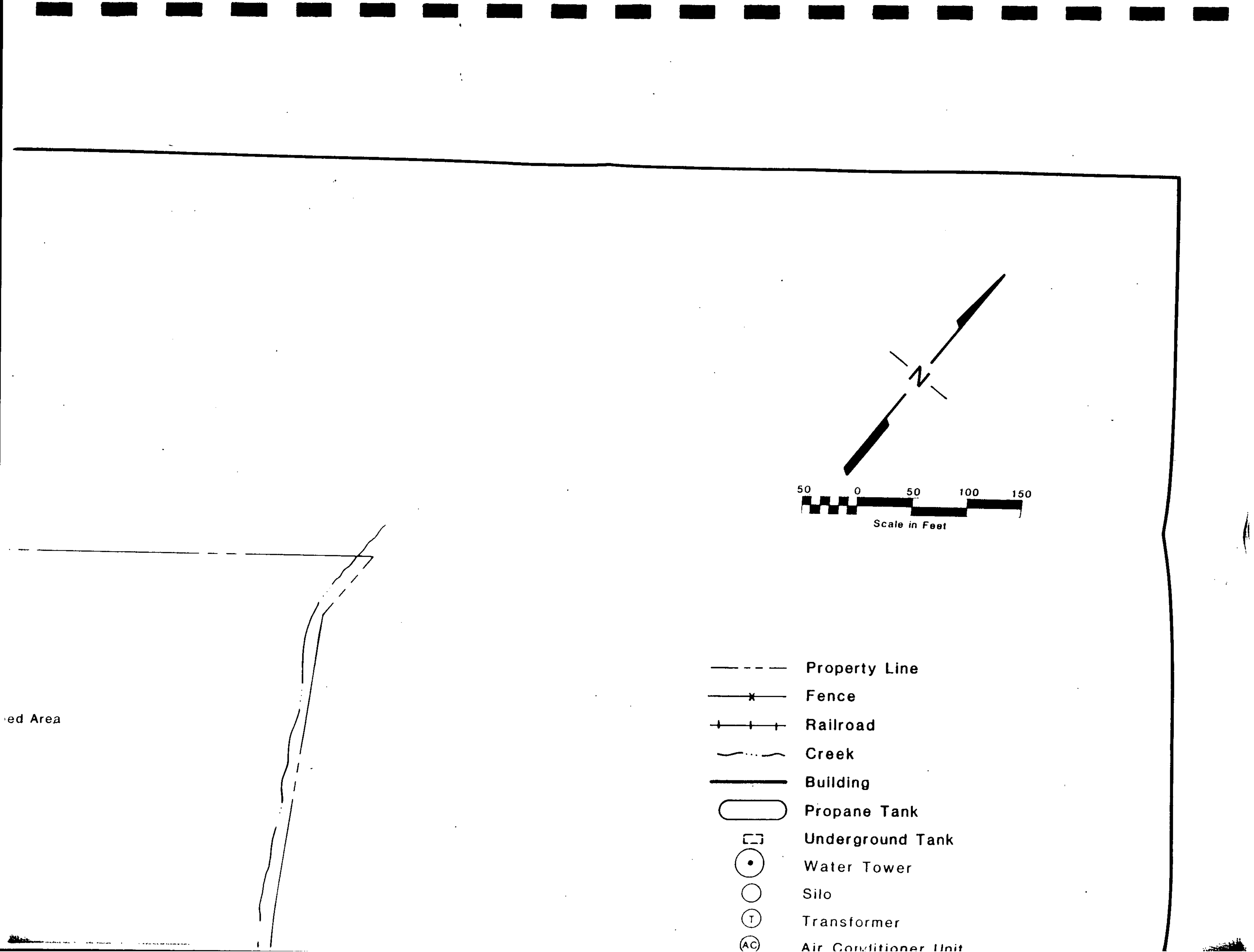
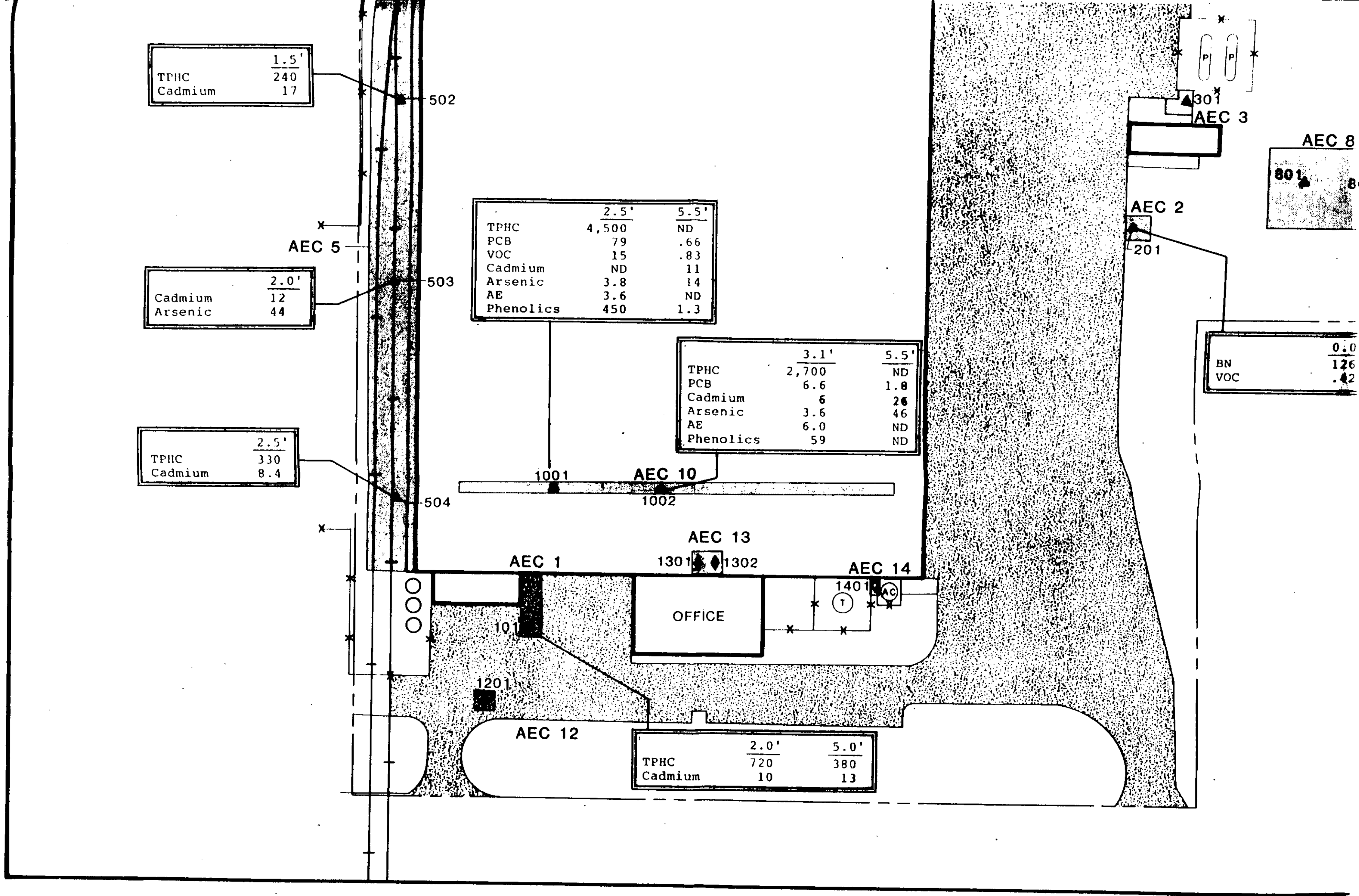
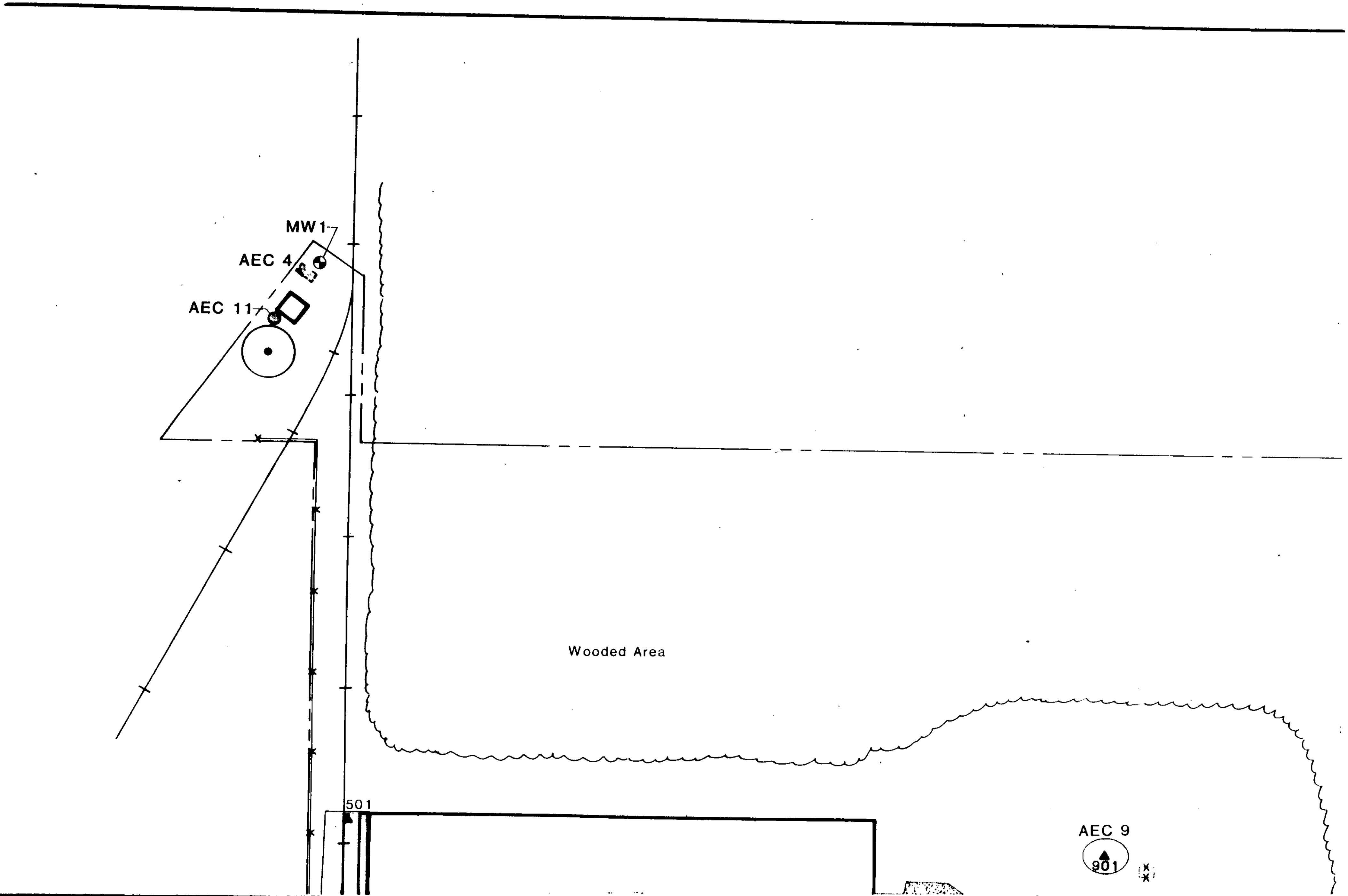
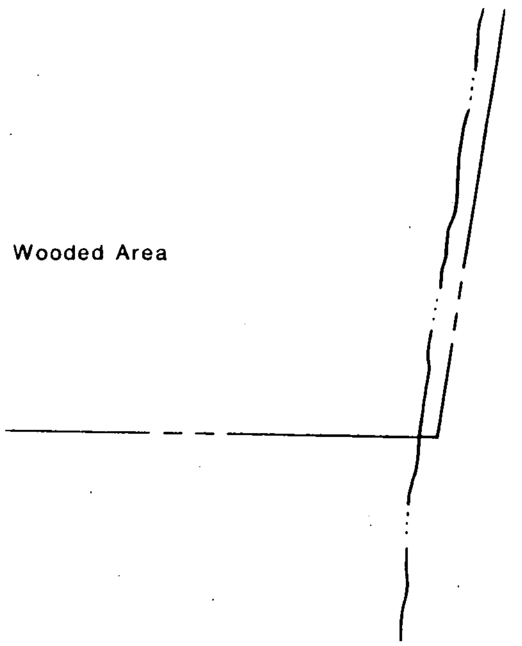


N
50 0 50 100 150
Scale in Feet
ed Area
Property Line
Fence
Railroad
Creek
Building
Propane Tank
Underground Tank
Water Tower
Silo
T
Transformer
AC
Air Conditioner Unit



1.5'
TPHC 240
Cadmium 17
502
AEC 5
2.0'
Cadmium 12
Arsenic 44
503
2.5'
TPHC 330
Cadmium 8.4
504
2.5' 5.5'
TPHC 4,500 ND
PCB 79 .66
VOC 15 .83
Cadmium ND 11
Arsenic 3.8 14
AE 3.6 ND
Phenolics 450 1.3
3.1' 5.5'
TPHC 2,700 ND
PCB 6.6 1.8
Cadmium 6 26
Arsenic 3.6 46
AE 6.0 ND
Phenolics 59 ND
1001
AEC 10
1002
AEC 13
1301
1302
AEC 1
101
AEC 14
1401
AC
T
OFFICE
1201
AEC 12
2.0' 5.0'
TPHC 720 380
Cadmium 10 13
P
P
301
AEC 3
AEC 8
801
AEC 2
201
0.0
BN 126
VOC .42


MW1
AEC 4
AEC 11
Wooded Area
501
AEC 9
901



▲ Hollow Stem Auger Boring

♦ Post Excavation Grab Sample

Monitoring Well

ENVIRON

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FIGURE 3

PROPOSED PHASE II AND POST EXCAVATION SAMPLING LOCATIONS

Polychrome Corp.
Yardville, New Jersey

DATE July, 1987.	DRAFTED BY C. Gwynn CHECKED BY B. Kraft
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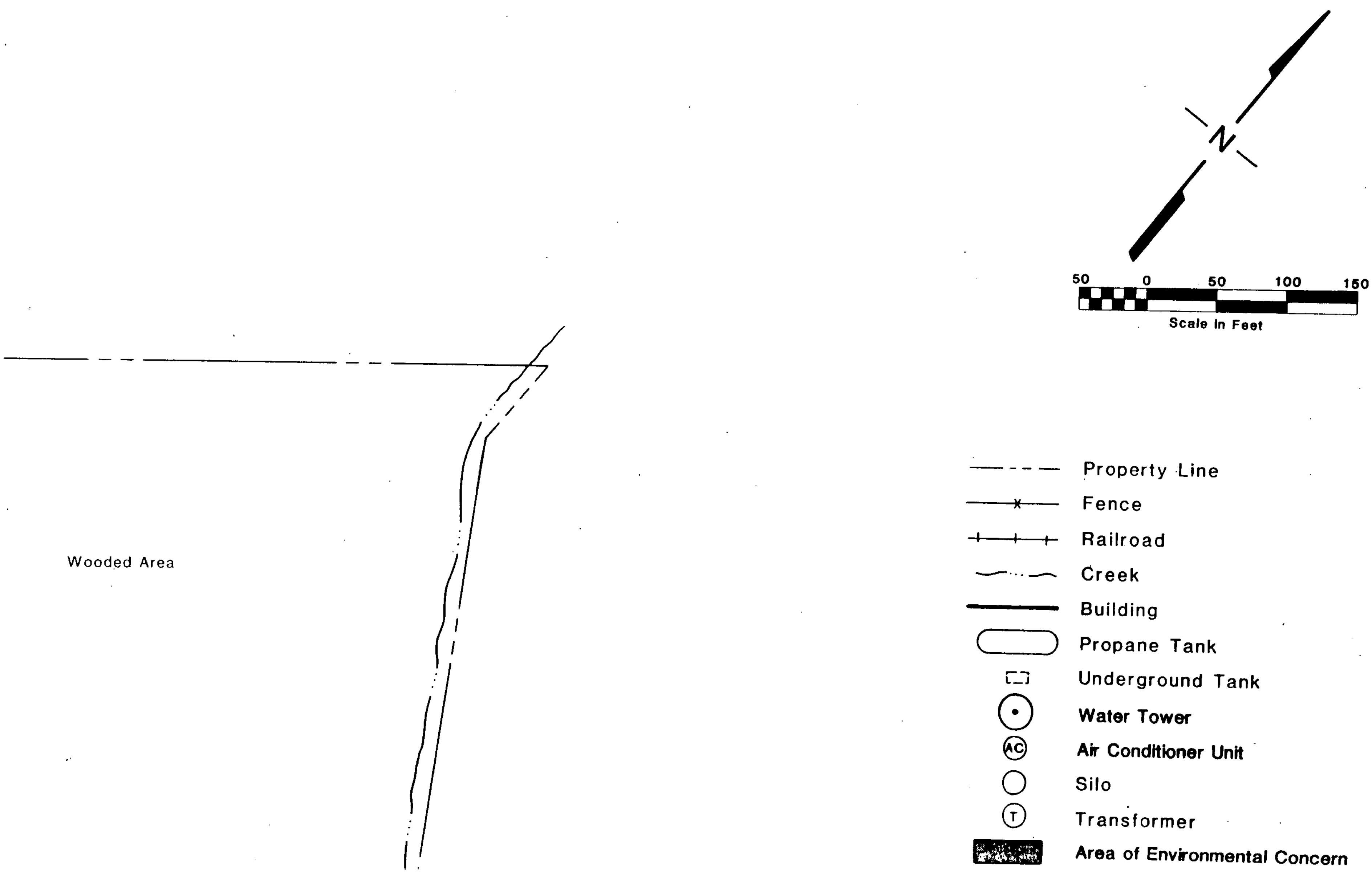
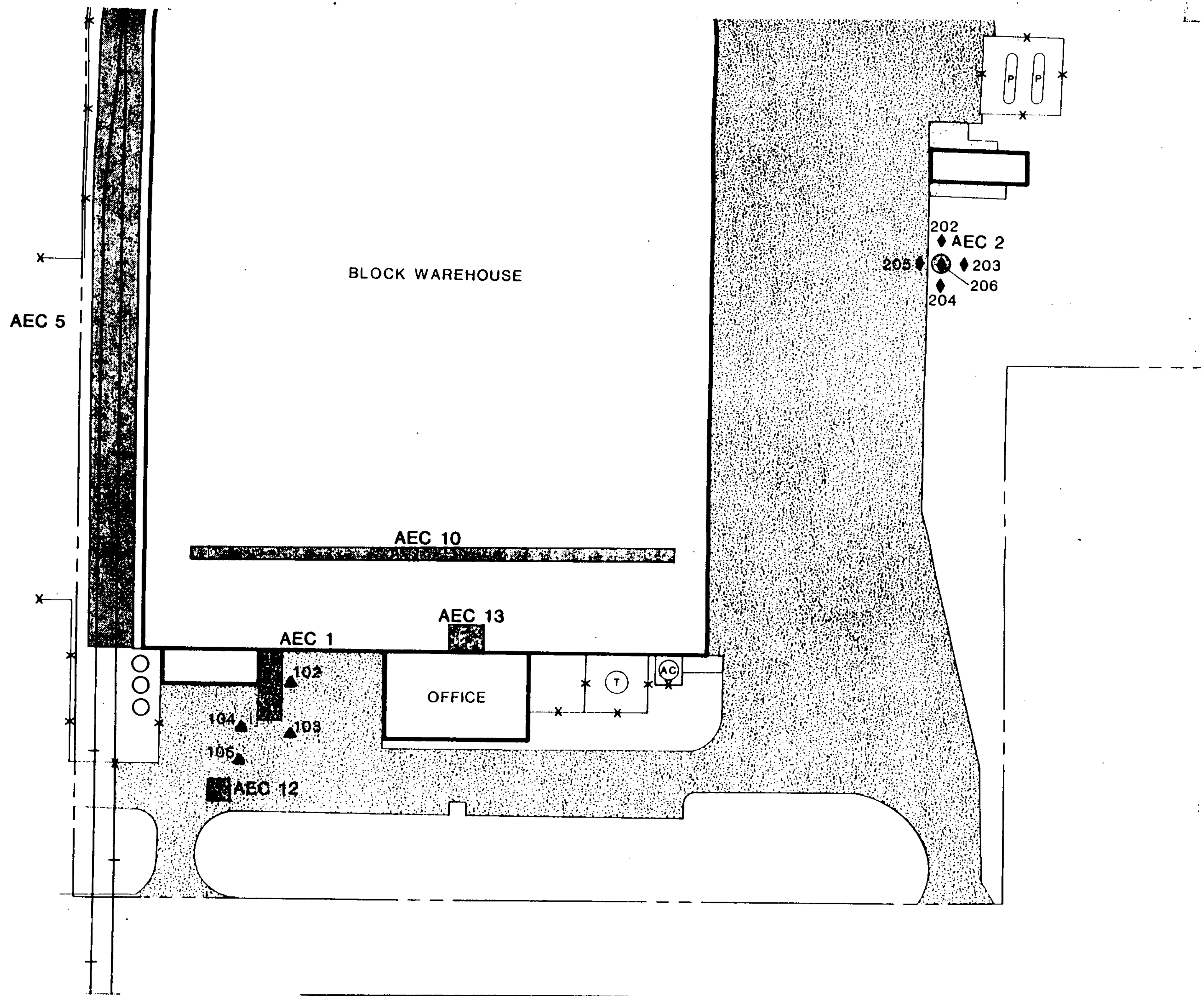
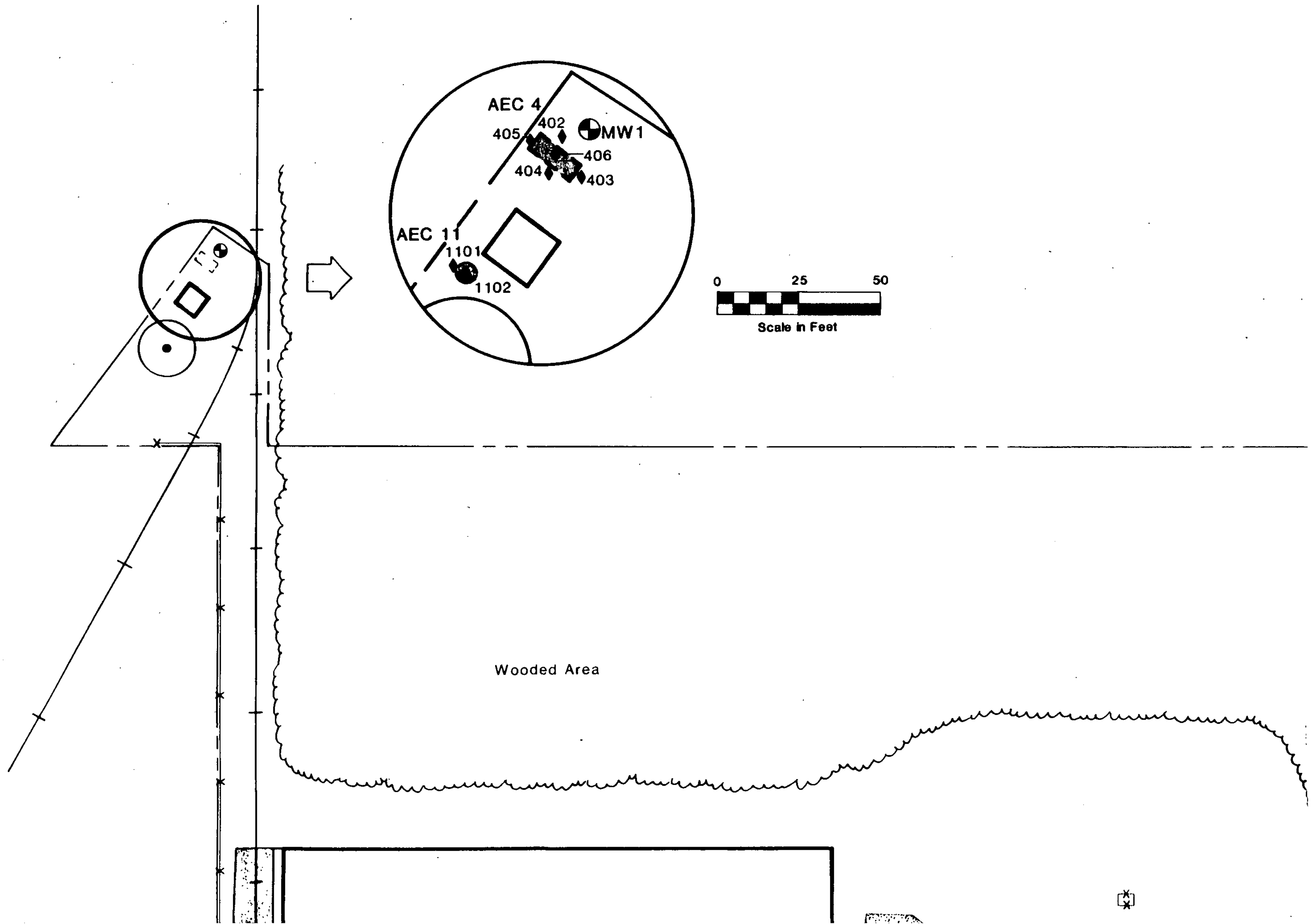

N
50 0 50 100 150
Scale in Feet
Wooded Area
Property Line
Fence
Railroad
Creek
Building
Propane Tank
Underground Tank
Water Tower
AC
Air Conditioner Unit
Silo
T
Transformer
Area of Environmental Concern



BLOCK WAREHOUSE
AEC 5
AEC 2
202
203
204
205
206
AEC 10
AEC 13
AEC 1
102
103
104
105
AEC 12
OFFICE
T
AC
P
P



AEC 4
402
405
MW1
406
404
403
AEC 11
1101
1102
0
25
50
Scale in Feet
Wooded Area

ATTACHMENT 1

Polychrome, Yardville, NJ

Boring No. 101

Geologic Log

0.0 - 1.0'	Asphalt and stone fill.
1.0 - 5.5'	Orange brown silty clay.

Drilling Specifications

Drilling Method:	Hollow-Stem Auger
Rig:	Dietrich D-25
Drilling Company:	J.E. Fritts & Associates, Inc.
Date Drilled:	August 1, 1988
Plugging Material:	Cuttings

Split Spoons

Split Spoon No.	Depth	Blow Counts	Hammer	Recovery
1	1 - 3 ' bgs	4, 4, 4, 5	140 lbs	0"
2	3 - 5 ' bgs	3, 3, 3, 4	140 lbs	0"

Samples Collected

Sample ID No.	Date	Analyses	Depth
609A-0101-SB01	8/1/88	PP+40, TPHC	2.0 - 3.0
609A-0101-SB02	8/1/88	PP+40, TPHC	5.0 - 5.5

Polychrome, Yardville, NJ

Boring No. 201

Geologic Log

0.0 - 1.0'	Gravel fill.
1.0 - 2.2'	Orange-brown plastic silty clay.
2.2 - 3.5'	Clayey silt with fine sand.
3.5 - 5.0'	Orange-brown clayey silt with gray mottles, trace gravel.

Drilling Specifications

Drilling Method:	Hollow-Stem Auger
Rig:	Dietrich D-25
Drilling Company:	J.E. Fritts & Associates, Inc.
Date Drilled:	August 1, 1988
Plugging Material:	Cuttings

Split Spoons

Split Spoon No.	Depth	Blow Counts	Hammer	Recovery
1	1 - 3 ' bgs	7, 9, 10, 12	140 lbs	18"
2	3 - 5 ' bgs	6, 12, 13, 11	140 lbs	20"

Samples Collected

Sample ID No.	Date	Analyses	Depth
609A-0201-SB01	8/1/88	TPHC, PCB, BN+15, PPM	0.0 - 0.5
609A-0201-SB01	8/1/88	VOC+15	1.5 - 2.0
609A-0201-SB02	8/1/88	TPHC, PCB, VOC+15, BN+15, PPM	3.0 - 3.5
609A-0201-SB03	8/1/88	TPHC, PCB, VOC+15, BN+15, PPM	5.5 - 6.0

Polychrome, Yardville, NJ

Boring No. 301

Geologic Log

0.0 - 1.2'	Orange-brown sandy silt, minor clay.
1.2 - 2.0'	Fine silty sand, with rounded quartz pebbles.
2.0 - 3.0'	Fine to medium orange sand with iron oxide laminations.
3.0 - 6.2'	Medium to coarse gravelly sand, poorly sorted.
6.2 - 7.2'	Fine to medium silty sand, wet.
7.2 - 8.0'	Medium to coarse sand, trace gravel.

Drilling Specifications

Drilling Method:	Hollow-Stem Auger
Rig:	Dietrich D-25
Drilling Company:	J.E. Fritts & Associates, Inc.
Date Drilled:	August 1, 1988
Plugging Material:	Cement Grout

Split Spoons

Split Spoon No.	Depth	Blow Counts	Hammer	Recovery
1	0 - 2 ' bgs	3, 7, 8, 8	140 lbs	20"
2	2 - 4 ' bgs	10, 21, 23, 43	140 lbs	16"
3	4 - 6 ' bgs	16, 23, 22, 17	140 lbs	12"
4	6 - 8 ' bgs	12, 16, 21, 29	140 lbs	18"

Samples Collected

Sample ID No.	Date	Analyses	Depth
609A-0301-SB01	8/1/88	PP+40, TPHC	0.0 - 0.5, 1.5 - 2.0
609A-0301-SB02	8/1/88	PP+40, TPHC	2.5 - 3.0
609A-0301-SB03	8/1/88	PP+40, TPHC	5.5 - 6.0

Polychrome, Yardville, NJ

Boring No. 501

Geologic Log

0.0 - 1.0'	Slag and gravel fill.
1.0 - 1.5'	Orange-brown and gray sandy silt and clay.
1.5 - 1.8'	Gray sandy silt.
1.8 - 5.0'	Orange-brown plastic silty clay, gray mottles.

Drilling Specifications

Drilling Method:	Hollow-Stem Auger
Rig:	Dietrich D-25
Drilling Company:	J.E. Fritts & Associates, Inc.
Date Drilled:	August 2, 1988
Plugging Material:	Cuttings

Split Spoons

Split Spoon No.	Depth	Blow Counts	Hammer	Recovery
1	1 - 3 ' bgs	10, 8, 9, 11	140 lbs	20"
2	3 - 5 ' bgs	9, 10, 10, 13	140 lbs	20"

Samples Collected

Sample ID No.	Date	Analyses	Depth
609A-0501-SB01	8/2/88	TPHC, BTEX	1.5 - 2.0
609A-0501-SB02	8/2/88	TPHC, BTEX	3.0 - 3.5
609A-0501-SB03	8/2/88	TPHC, BTEX	4.5 - 5.0

Polychrome, Yardville, NJ

Boring No. 502

Geologic Log

0.0 - 1.0'	Slag and gravel fill.
1.0 - 5.0'	Orange-brown silty clay with gray laminations.
5.0 - 6.0'	Sandy clay, minor silt.

Drilling Specifications

Drilling Method:	Hollow-Stem Auger
Rig:	Dietrich D-25
Drilling Company:	J.E. Fritts & Associates, Inc.
Date Drilled:	August 2, 1988
Plugging Material:	Cuttings

Split Spoons

Split Spoon No.	Depth	Blow Counts	Hammer	Recovery
1	1.0 - 3.0' bgs	4, 4, 8, 11	140 lbs	12"
2	3.0 - 5.0' bgs	4, 6, 9, 10	140 lbs	12"
3	4.5 - 6.5' bgs	2, 3, 7, 12	140 lbs	24"

Samples Collected

Sample ID No.	Date	Analyses	Depth
609A-0502-SB01	8/2/88	PP+40	1.0 - 1.5
609A-0502-SB01	8/2/88	TPHC, BTEX	1.5 - 2.0
609A-0502-SB02	8/2/88	TPHC, BTEX	3.0 - 3.5
609A-0502-SB03	8/2/88	TPHC, BTEX	5.0 - 5.5

Polychrome, Yardville, NJ

Boring No. 503

Geologic Log

0.0 - 1.0'	Slag and gravel fill, wet.
1.0 - 4.0'	Red-brown plastic silty clay with gray laminations.
4.0 - 5.2'	Red-brown and gray clay with hard pans and gravel.
5.2 - 6.0'	Gray to black clay and peat with hard pans and gravel, damp.

Drilling Specifications

Drilling Method:	Hollow-Stem Auger
Rig:	Dietrich D-25
Drilling Company:	J.E. Fritts & Associates, Inc.
Date Drilled:	August 2, 1988
Plugging Material:	Cuttings

Split Spoons

Split Spoon No.	Depth	Blow Counts	Hammer	Recovery
1	1.0 - 3.0' bgs	3, 4, 7, 11	140 lbs	0"
2	2.0 - 4.0' bgs	3, 2, 4, 7	140 lbs	18"
3	4.0 - 6.0' bgs	4, 6, 6, 6	140 lbs	24"

Samples Collected

Sample ID No.	Date	Analyses	Depth
609A-0503-SB01	8/2/88	PP+40	2.0 - 2.5
609A-0503-SB01	8/2/88	TPHC, BTEX	2.5 - 3.0
609A-0503-SB02	8/2/88	TPHC, BTEX	5.5 - 6.0

Polychrome, Yardville, NJ

Boring No. 504

Geologic Log

0.0 - 1.0'	Slag and gravel fill, wet.
1.0 - 5.2'	Red-brown and gray laminated plastic silty clay, gray dominant in lower 1 foot.
5.2 - 6.0'	Black peat, damp.

Drilling Specifications

Drilling Method:	Hollow-Stem Auger
Rig:	Dietrich D-25
Drilling Company:	J.E. Fritts & Associates, Inc.
Date Drilled:	August 2, 1988
Plugging Material:	Cuttings

Split Spoons

Split Spoon No.	Depth	Blow Counts	Hammer	Recovery
1	1.0 - 3.0' bgs	3, 4, 7, 10	140 lbs	1"
2	2.0 - 4.0' bgs	3, 3, 3, 4	140 lbs	18"
3	4.0 - 6.0' bgs	4, 4, 6, 10	140 lbs	24"

Samples Collected

Sample ID No.	Date	Analyses	Depth
609A-0504-SB01	8/2/88	PP+40	2.0 - 2.5
609A-0504-SB01	8/2/88	TPHC, BTEX	2.5 - 3.0
609A-0504-SB02	8/2/88	TPHC, BTEX	4.0 - 4.5
609A-0504-SB22	8/2/88	TPHC, BTEX	4.0 - 4.5
609A-0504-SB03	8/2/88	TPHC, BTEX	5.5 - 6.0

Polychrome, Yardville, NJ

Boring No. 801

Geologic Log

0.0 - 1.5'	Brown silty loam with roots.
1.5 - 2.5'	Silty clay with gravel.
2.5 - 6.0'	Fine to medium sand, minor gravel, water table at 5 feet.

Drilling Specifications

Drilling Method:	Hollow-Stem Auger
Rig:	Dietrich D-25
Drilling Company:	J.E. Fritts & Associates, Inc.
Date Drilled:	August 1, 1988
Plugging Material:	Cuttings

Split Spoons

Split Spoon No.	Depth	Blow Counts	Hammer	Recovery
1	2.0 - 4.0' bgs	5, 12, 9, 9	140 lbs	18"
2	4.0 - 6.0' bgs	9, 20, 22, 25	140 lbs	18"

Samples Collected

Sample ID No.	Date	Analyses	Depth
609A-0801-SB01	8/1/88	PP+40	2.0 - 2.5
609A-0801-SB02	8/1/88	PP+40	4.5 - 5.0

Polychrome, Yardville, NJ

Boring No. 802

Geologic Log

0.0 - 3.0'	Brown silty loam and roots.
3.0 - 4.3'	Medium to coarse orange gravelly sand.
4.3 - 5.3'	Very fine to fine silty sand.
5.3 - 6.0'	Moist plastic clay, trace gravel.

Drilling Specifications

Drilling Method:	Hollow-Stem Auger
Rig:	Dietrich D-25
Drilling Company:	J.E. Fritts & Associates, Inc.
Date Drilled:	August 1, 1988
Plugging Material:	Cuttings

Split Spoons

Split Spoon No.	Depth	Blow Counts	Hammer	Recovery
1	2.0 - 4.0' bgs	4, 4, 3, 3	140 lbs	24"
2	4.0 - 6.0' bgs	4, 9, 6, 6	140 lbs	20"

Samples Collected

Sample ID No.	Date	Analyses	Depth
609A-0802-SB01	8/1/88	PP+40	2.5 - 3.0

Polychrome, Yardville, NJ

Boring No. 901

Geologic Log

0.0 - 1.0'	Brown silty loam and roots.
1.0 - 1.7'	Brown silt.
1.7 - 4.0'	Orange-brown plastic clay.

Drilling Specifications

Drilling Method:	Hollow-Stem Auger
Rig:	Dietrich D-25
Drilling Company:	J.E. Fritts & Associates, Inc.
Date Drilled:	August 1, 1988
Plugging Material:	Cuttings

Split Spoons

Split Spoon No.	Depth	Blow Counts	Hammer	Recovery
1	0.0 - 2.0' bgs	3, 3, 2, 4	140 lbs	24"
2	2.0 - 4.0' bgs	3, 5, 5, 13	140 lbs	24"

Samples Collected

Sample ID No.	Date	Analyses	Depth
609A-0901-SB01	8/1/88	TPHC, PP+40 (no VOCs)	0.0 - 0.5
609A-0901-SB01	8/1/88	VOC+15	1.5 - 2.0
609A-0901-SB02	8/1/88	TPHC, PP+40	3.0 - 3.5

Polychrome, Yardville, NJ

Boring No. 1001

Geologic Log

0.0 - 1.8'	Open trench.
1.8 - 2.3'	Concrete.
2.3 - 3.4'	Brown and gray silty sand, minor clay.
3.4 - 6.3'	Clayey silt, gray with greenish mottles grading to orange-brown with gray mottles, damp at base.

Drilling Specifications

Drilling Method:	Hollow-Stem Auger
Rig:	Dietrich D-25
Drilling Company:	J.E. Fritts & Associates, Inc.
Date Drilled:	August 1, 1988
Plugging Material:	Cuttings

Split Spoons

Split Spoon No.	Depth	Blow Counts	Hammer	Recovery
1	2.3 - 4.3' bgs	16, 11, 12, 13	140 lbs	22"
2	4.3 - 6.3' bgs	14, 14, 16, 17	140 lbs	20"

Samples Collected

Sample ID No.	Date	Analyses	Depth
609A-1001-SB01	8/1/88	PP+40, TPHC	2.5 - 3.0
609A-1001-SB02	8/1/88	PP+40, TPHC	5.5 - 6.0

Polychrome, Yardville, NJ

Boring No. 1002

Geologic Log

0.0 - 2.8'	Open trench.
2.8 - 3.1'	Concrete.
3.1 - 5.1'	Brown to greenish gray clayey silt, mottles beginning at 4, 5 feet.
5.1 - 6.1'	Orange-brown and gray mottled silty clay.

Drilling Specifications

Drilling Method:	Hollow-Stem Auger
Rig:	Dietrich D-25
Drilling Company:	J.E. Fritts & Associates, Inc.
Date Drilled:	August 1, 1988
Plugging Material:	Cuttings

Split Spoons

Split Spoon No.	Depth	Blow Counts	Hammer	Recovery
1	3.1 - 5.1' bgs	12, 6, 10, 13	140 lbs	24"
2	5.1 - 6.1' bgs	16, 19	140 lbs	12"

Samples Collected

Sample ID No.	Date	Analyses	Depth
609A-1002-SB01	8/1/88	PP+40, TPHC	3.1 - 3.6
609A-1002-SB02	8/1/88	PP+40, TPHC	5.5 - 6.0

ATTACHMENT 2

July 11, 1988

Mr. Kenneth T. Hart
Bureau of Environmental Evaluation and
Cleanup Respinsibility Assessment
New Jersey Department of
Environmental Protection
401 East State Street, 5th Floor
Trenton, New Jersey 08608

Re: Polychrome Corporation
Yardville, Mercer County
ECRA Case No. 86122

Dear Mr. Hart:

I am writing with regard to your June 3, 1988 letter to Carol Surgens, Esq. granting conditional approval to the July, 1987 Sampling Plan for the above referenced facility. There are several items in Sections I.C. and II.A. for which ENVIRON needs clarification prior to implementation of the Sampling Plan, which is scheduled to begin shortly. Since we understand Ms. Feinberg, the Case Manager, is leaving the NJDEP on July 15, I felt it was best to discuss these items with you. Each requirement of these sections, and ENVIRON's response to them, is provided below in the same order as in the letter.

<u>Section I.C.</u>

<u>NJDEP Requirement:</u>

> "Polychrome shall collect two additional borings north of the building in AEC 5 (Railroad Tracks)."

<u>ENVIRON Response:</u>

> "As described in the Site Evaluation Submission (SES), and in subsequent submissions, Monsanto Company, a former owner and occupant of the facility, disposed of a portion of their waste machine oil on the section of the railroad siding adjacent to the building in order to limit weed growth. Only this portion of the railroad siding is

designated an area of environmental concern and only because of the spill history. Thus, ENVIRON does not understand why additional borings are required beyond the extent of the spill area. Furthermore, ENVIRON questions the potential use of the soil quality data obtained from these two borings. As this is an active railroad siding currently in use by several industrial establishments, soil contamination may exist but have resulted from railroad equipment, not from industrial activities."

<u>NJDEP Requirement:</u>

"Two samples shall be taken from each boring. One shall be from the first 0-6" in the natural soil below the trap rock layer added in 1965 and the second from the 6" interval across the water table."

<u>ENVIRON Response:</u>

"This requirement suggests that the second sample be collected from partially within the saturated zone. This is not consistent with previous NJDEP recommendations. Is this sample to be collected from an interval directly above the water table, as is typically recommended, or actually from the interval across the water table? Secondly, are the sampling depths which ENVIRON had proposed for the other borings in AEC 5 to be similarly revised?"

<u>NJDEP Requirement:</u>

"Three of the samples from worst case areas shall include analyses for USEPA Priority Pollutants +40 and Petroleum Hydrocarbons at the first 0-6" interval below the trap rock."

<u>ENVIRON Response:</u>

"ENVIRON is assuming that by "worst case areas", the NJDEP means either that samples for the broader set of parameters shall be collected from the most discolored soils or from the area which Monsanto indicated was the primary area for waste oil disposal. Clarification of this is necessary prior to implementation of the field program. However, ENVIRON does not believe that analyses for PP+40 are warranted. In 1982, Monsanto retained Lippincott Engineering Associates to install a number of soil borings along the entire length of the spill area and collect soil samples for PCB analyses. Seven such samples were obtained and were analyzed for eight Arochlors. No

Arochlors were detected in any sample. Documentation of this sampling has been provided to the NJDEP in the SES. Thus, ENVIRON does not believe that analyses for PCB need to be performed on any sample from AEC 5. Furthermore, ENVIRON believes that the descriptions Monsanto has provided regarding the source of the waste oil, the waste oil disposal practices in this area and the manufacturing processes do not suggest in any way that pesticides, cyanide, phenols or acid extractable organic compounds would be present in AEC 5. Machine oil would not typically contain any of these compounds and these compounds were not used in Monsanto's manufacturing processes. Therefore, ENVIRON does not believe that it is necessary to analyze for these parameters in AEC 5. ENVIRON understands that base/neutral extractable organic compounds (BN) and volatile organic compounds (VOC) may be associated with machine oil, and believes that only these parameters need be included in the broader set of analyses for AEC 5."

NJDEP Requirement:

"All other samples shall be analyzed for petroleum hydrocarbons, Benzene, Toluene, Ethylbenzene, and total Xylenes."

ENVIRON Response:

"ENVIRON will substitute analyses for BTEX for the analyses for BN+15 that were originally proposed."

Section II.A.

NJDEP Requirement:

"Polychrome shall install **two 4 inch diameter** monitoring wells downgradient of the railroad tracks. Monitoring wells are required to assess the impact to groundwater quality from the waste oil discharged. One monitoring well shall be installed upgradient of all areas of concern."

ENVIRON Response:

"As discussed a number of times with the NJDEP personnel working on this case, ENVIRON does not believe that the installation of monitoring wells is appropriate at this time. ENVIRON has proposed an extensive soil sampling program in AEC 5, which will certainly provide an amount of soil quality data sufficient to determine whether the ground water quality may have been impacted as a result of the waste oil disposal. ENVIRON and Polychrome propose that if soil contamination is identified in AEC 5, the need for a ground water sampling program will then be evaluated. In addition, ENVIRON does not believe that the site hydrogeology has been adequately assessed in order to correctly place the wells required. Thus, ENVIRON proposes to install two piezometers, which along with the well already installed, will help to define :e direction of ground water flow. These piezometers wil. be constructed in borings following the collection of soil samples."

In light of the 90-day reporting time, ENVIRON and Polychrome would appreciate your timely review and response to our questions so that they may be resolved without causing delay of our implementation schedule. If you need additional clarification of this letter, please do not hesitate to call me.

Sincerely,

William D. Kraft

William D. Kraft
Staff Geologist

WDK:srf
1237f

cc: Carol Surgens, Esq.
Barbara Cane, Esq.

ATTACHMENT 3

VIII. Analytical Results

Volatile Organics

Constituent	Sample Designation: Nonaqueous Method Blank 1	A16894-1 609A-0201-SB01	A16894-2 609A-0201-SB02
Chloromethane	330 U	360 U	410 U
Bromomethane	330 U	360 U	410 U
Vinyl Chloride	330 U	360 U	410 U
Chloroethane	330 U	360 U	410 U
Methylene Chloride	330 U	360 U	800
1,1-Dichloroethene	330 U	360 U	410 U
1,1-Dichloroethane	330 U	360 U	410 U
trans-1,2-Dichloroethene	330 U	360 U	410 U
Chloroform	330 U	360 U	410 U
1,2-Dichloroethane	330 U	360 U	410 U
1,1,1-Trichloroethane	330 U	360 U	410 U
Carbon Tetrachloride	330 U	360 U	410 U
Bromodichloromethane	330 U	360 U	410 U
1,2-Dichloropropane	330 U	360 U	410 U
trans-1,3-Dichloropropene	330 U	360 U	410 U
Trichloroethene	330 U	360 U	410 U
Dibromochloromethane	330 U	360 U	410 U
1,1,2-Trichloroethane	330 U	360 U	410 U
Benzene	330 U	360 U	410 U
cis-1,3-Dichloropropene	330 U	360 U	410 U
2-Chloroethyl Vinyl Ether	330 U	360 U	410 U
Bromoform	330 U	360 U	410 U
Tetrachloroethene	330 U	360 U	410 U
1,1,2,2-Tetrachloroethane	330 U	360 U	410 U
Toluene	330 U	420	3,600
Chlorobenzene	330 U	360 U	410 U
Ethylbenzene	330 U	360 U	410 U
m-Xylene	330 U	360 U	410 U
o,p-Xylene	330 U	360 U	410 U
Units	(ug/kg)	(ug/kg dw)	(ug/kg dw)

VIII. Analytical Results (Cont'd)

Volatile Organics

	Sample Designation		
Constituent	Nonaqueous Method Blank 1	A16894-3 609A-0201-SB03	A16894-4 609A-0301-SB01
Chloromethane	330 U	360 U	390 U
Bromomethane	330 U	360 U	390 U
Vinyl Chloride	330 U	360 U	390 U
Chloroethane	330 U	360 U	390 U
Methylene Chloride	330 U	140 J	51 J
1,1-Dichloroethene	330 U	360 U	390 U
1,1-Dichloroethane	330 U	360 U	390 U
trans-1,2-Dichloroethene	330 U	360 U	390 U
Chloroform	330 U	360 U	390 U
1,2-Dichloroethane	330 U	360 U	390 U
1,1,1-Trichloroethane	330 U	360 U	390 U
Carbon Tetrachloride	330 U	360 U	390 U
Bromodichloromethane	330 U	360 U	390 U
1,2-Dichloropropane	330 U	360 U	390 U
trans-1,3-Dichloropropene	330 U	360 U	390 U
Trichloroethene	330 U	360 U	390 U
Dibromochloromethane	330 U	360 U	390 U
1,1,2-Trichloroethane	330 U	360 U	390 U
Benzene	330 U	360 U	390 U
cis-1,3-Dichloropropene	330 U	360 U	390 U
2-Chloroethyl Vinyl Ether	330 U	360 U	390 U
Bromoform	330 U	360 U	390 U
Tetrachloroethene	330 U	360 U	390 U
1,1,2,2-Tetrachloroethane	330 U	360 U	390 U
Toluene	330 U	840	590
Chlorobenzene	330 U	360 U	390 U
Ethylbenzene	330 U	360 U	390 U
m-Xylene	330 U	360 U	390 U
o,p-Xylene	330 U	360 U	390 U
Units	(ug/kg)	(ug/kg dw)	(ug/kg dw)

VIII. Analytical Results (Cont'd)

Volatile Organics

	Sample Designation	
Constituent	Aqueous Method Blank	A16894-10 609A-880801-TB
Chloromethane	10 U	10 U
Bromomethane	10 U	10 U
Vinyl Chloride	10 U	10 U
Chloroethane	10 U	10 U
Methylene Chloride	5.4 J	1.8 J
1,1-Dichloroethene	10 U	10 U
1,1-Dichloroethane	10 U	10 U
trans-1,2-Dichloroethene	10 U	10 U
Chloroform	10 U	10 U
1,2-Dichloroethane	10 U	10 U
1,1,1-Trichloroethane	10 U	10 U
Carbon Tetrachloride	10 U	10 U
Bromodichloromethane	10 U	10 U
1,2-Dichloropropane	10 U	10 U
trans-1,3-Dichloropropene	10 U	10 U
Trichloroethene	10 U	10 U
Dibromochloromethane	10 U	10 U
1,1,2-Trichloroethane	10 U	10 U
Benzene	10 U	10 U
cis-1,3-Dichloropropene	10 U	10 U
2-Chloroethyl Vinyl Ether	10 U	10 U
Bromoform	10 U	10 U
Tetrachloroethene	10 U	10 U
1,1,2,2-Tetrachloroethane	0.3 J	10 U
Toluene	10 U	10 U
Chlorobenzene	10 U	10 U
Ethylbenzene	10 U	10 U
m-Xylene	10 U	10 U
o,p-Xylene	10 U	10 U
Units	(ug/kg)	(ug/l)

VIII. Analytical Results (Cont'd)

Volatile Organics

	Sample Designation		
Constituent	Nonaqueous Method Blank 2	A16894-6 609A-0301-SB03	A16894-8 609A-0802-SB01
Chloromethane	330 U	340 U	370 U
Bromomethane	330 U	340 U	370 U
Vinyl Chloride	330 U	340 U	370 U
Chloroethane	330 U	364 U	370 U
Methylene Chloride	330 U	340 U	370 U
1,1-Dichloroethene	330 U	340 U	370 U
1,1-Dichloroethane	330 U	340 U	370 U
trans-1,2-Dichloroethene	330 U	340 U	370 U
Chloroform	330 U	340 U	370 U
1,2-Dichloroethane	330 U	340 U	370 U
1,1,1-Trichloroethane	330 U	340 U	370 U
Carbon Tetrachloride	330 U	340 U	370 U
Bromodichloromethane	330 U	340 U	370 U
1,2-Dichloropropane	330 U	340 U	370 U
trans-1,3-Dichloropropene	330 U	340 U	370 U
Trichloroethene	330 U	340 U	370 U
Dibromochloromethane	330 U	340 U	370 U
1,1,2-Trichloroethane	330 U	340 U	370 U
Benzene	330 U	340 U	370 U
cis-1,3-Dichloropropene	330 U	340 U	370 U
2-Chloroethyl Vinyl Ether	330 U	340 U	370 U
Bromoform	330 U	340 U	370 U
Tetrachloroethene	330 U	340 U	370 U
1,1,2,2-Tetrachloroethane	330 U	340 U	370 U
Toluene	330 U	340 U	370 U
Chlorobenzene	330 U	340 U	370 U
Ethylbenzene	330 U	340 U	370 U
m-Xylene	330 U	340 U	370 U
o,p-Xylene	330 U	340 U	370 U
Units	(ug/kg)	(ug/kg dw)	(ug/kg dw)

VIII. Analytical Results (Cont'd)

Volatile Organics

	Sample Designation	
Constituent	Nonaqueous Method Blank 2	A16894-9 609A-0802-SB02
Chloromethane	330 U	380 U
Bromomethane	330 U	380 U
Vinyl Chloride	330 U	380 U
Chloroethane	330 U	380 U
Methylene Chloride	330 U	410
1,1-Dichloroethene	330 U	380 U
1,1-Dichloroethane	330 U	380 U
trans-1,2-Dichloroethene	330 U	380 U
Chloroform	330 U	380 U
1,2-Dichloroethane	330 U	380 U
1,1,1-Trichloroethane	330 U	380 U
Carbon Tetrachloride	330 U	380 U
Bromodichloromethane	330 U	380 U
1,2-Dichloropropane	330 U	380 U
trans-1,3-Dichloropropene	330 U	380 U
Trichloroethene	330 U	380 U
Dibromochloromethane	330 U	380 U
1,1,2-Trichloroethane	330 U	380 U
Benzene	330 U	380 U
cis-1,3-Dichloropropene	330 U	380 U
2-Chloroethyl Vinyl Ether	330 U	380 U
Bromoform	330 U	380 U
Tetrachloroethene	330 U	380 U
1,1,2,2-Tetrachloroethane	330 U	380 U
Toluene	330 U	1,300
Chlorobenzene	330 U	380 U
Ethylbenzene	330 U	380 U
m-Xylene	330 U	380 U
o,p-Xylene	330 U	380 U
Units	(ug/kg)	(ug/kg dw)

VIII. Analytical Results (Cont'd)

Volatile Organics

Constituent	Sample Designation: Nonaqueous Method Blank 3	A16894-5 609A-0301-SB02	A16894-7 609A-0801-SB01
Chloromethane	330 U	350 U	360 U
Bromomethane	330 U	350 U	360 U
Vinyl Chloride	330 U	350 U	360 U
Chloroethane	330 U	350 U	360 U
Methylene Chloride	330 U	350 U	1,800
1,1-Dichloroethene	330 U	350 U	360 U
1,1-Dichloroethane	330 U	350 U	360 U
trans-1,2-Dichloroethene	330 U	350 U	360 U
Chloroform	330 U	350 U	360 U
1,2-Dichloroethane	330 U	350 U	360 U
1,1,1-Trichloroethane	330 U	350 U	360 U
Carbon Tetrachloride	330 U	350 U	360 U
Bromodichloromethane	330 U	350 U	360 U
1,2-Dichloropropane	330 U	350 U	360 U
trans-1,3-Dichloropropene	330 U	350 U	360 U
Trichloroethene	330 U	350 U	360 U
Dibromochloromethane	330 U	350 U	360 U
1,1,2-Trichloroethane	330 U	350 U	360 U
Benzene	330 U	350 U	360 U
cis-1,3-Dichloropropene	330 U	350 U	360 U
2-Chloroethyl Vinyl Ether	330 U	350 U	360 U
Bromoform	330 U	350 U	360 U
Tetrachloroethene	330 U	350 U	360 U
1,1,2,2-Tetrachloroethane	330 U	350 U	360 U
Toluene	330 U	350 U	2,800
Chlorobenzene	330 U	350 U	360 U
Ethylbenzene	330 U	350 U	360 U
m-Xylene	330 U	350 U	360 U
o,p-Xylene	330 U	350 U	360 U
Units	(ug/kg)	(ug/kg dw)	(ug/kg dw)

VII. Analytical Results (Cont'd)

Semivolatile Organics (Page 1 of 2)

		Sample Designation		
Constituent	Method Blank	A16894-1 609A-0201-SB01	A16894-2 609A-0201 SB02	A16894-3 609A-0201-SB03
N-Nitrosodimethylamine	330 U	340 U	410 U	360 U
Bis(2-chloroethyl) Ether	330 U	340 U	410 U	360 U
1,3-Dichlorobenzene	330 U	340 U	410 U	360 U
1,4-Dichlorobenzene	330 U	340 U	410 U	360 U
1,2-Dichlorobenzene	330 U	340 U	410 U	360 U
Bis(2-chloroisopropyl) Ether	330 U	340 U	410 U	360 U
N-Nitrosodipropylamine	330 U	340 U	410 U	360 U
Hexachloroethane	330 U	340 U	410 U	360 U
Nitrobenzene	330 U	340 U	410 U	360 U
Isophorone	330 U	340 U	410 U	360 U
Bis(2-chloroethoxy)methane	330 U	340 U	410 U	360 U
1,2,4-Trichlorobenzene	330 U	340 U	410 U	360 U
Naphthalene	330 U	340 U	410 U	360 U
Hexachlorobutadiene	330 U	340 U	410 U	360 U
Hexachlorocyclopentadiene	330 U	340 U	410 U	360 U
2-Chloronaphthalene	330 U	340 U	410 U	360 U
Dimethyl Phthalate	330 U	340 U	410 U	360 U
Acenaphthylene	330 U	340 U	410 U	360 U
Acenaphthene	330 U	340 U	410 U	360 U
Units	(ug/kg)	(ug/kg dw)	(ug/kg dw)	(ug/kg dw)

VIII. Analytical Results (Cont'd)

Semivolatile Organics (Page 2 of 2)

Constituent	Method Blank	Sample Designation A16894-1 609A-0201-SB01	A16894-2 609A-0201-SB02	A16894-3 609A-0201-SB03
2,4-Dinitrotoluene	330 U	340 U	410 U	360 U
2,6-Dinitrotoluene	330 U	340 U	410 U	360 U
Diethyl Phthalate	330 U	1,100	410 U	360 U
4-Chlorophenyl Phenyl Ether	330 U	340 U	410 U	360 U
Fluorene	330 U	90 J	410 U	360 U
N-Nitrosodiphenylamine	330 U	340 U	26 J	360 U
4-Bromophenyl Phenyl Ether	330 U	340 U	410 U	360 U
Hexachlorobenzene	330 U	340 U	410 U	360 U
Phenanthrene	330 U	800	410 U	33 J
Anthracene	330 U	190 J	410 U	360 U
Dibutyl Phthalate	22 J	170 J	410 U	23 J
Fluoranthene	330 U	1,500	410 U	62 J
Benzidine	3,200 U	3,400 U	4,100 U	3,600 U
Pyrene	330 U	1,100	410 U	46 J
Butylbenzyl Phthalate	330 U	340 U	410 U	360 U
3,3'-Dichlorobenzidine	660 U	680 U	820 U	730 U
Benzo(a)anthracene	330 U	780	410 U	360 U
Bis(2-ethylhexyl) Phthalate	18 J	120,000	170 J	1,200
Chrysene	330 U	340 U	410 U	360 U
Dioctyl Phthalate	330 U	340 U	410 U	360 U
Benzo(b)fluoranthene	330 U	500	410 U	360 U
Benzo(k)fluoranthene	330 U	420	410 U	360 U
Benzo(a)pyrene	330 U	430	410 U	360 U
Indeno(1,2,3-cd)pyrene	330 U	180 J	410 U	360 U
Dibenzo(a,h)anthracene	330 U	340 U	410 U	360 U
Benzo(g,h,i)perylene	330 U	340 U	410 U	360 U
Units	(ug/kg)	(ug/kg dw)	(ug/kg dw)	(ug/kg dw)

VIII. Analytical Results (Cont'd)

Semivolatile Organics (Page 1 of 2)

Constituent	Method Blank	A16894-4 609A-0301-SB01	A16894-5 609A-0301 SB02	A16894-6 609A-0301-SB03
		Sample Designation		
N-Nitrosodimethylamine	330 U	380 U	350 U	340 U
Phenol	330 U	380 U	350 U	340 U
Bis(2-chloroethyl) Ether	330 U	380 U	350 U	340 U
2-Chlorophenol	330 U	380 U	350 U	340 U
1,3-Dichlorobenzene	330 U	380 U	350 U	340 U
1,4-Dichlorobenzene	330 U	380 U	29 J	26 J
1,2-Dichlorobenzene	330 U	380 U	350 U	340 U
2-Methylphenol	330 U	380 U	350 U	340 U
Bis(2-chloroisopropyl) Ether	330 U	380 U	350 U	340 U
4-Methylphenol	330 U	380 U	350 U	340 U
N-Nitrosodipropylamine	330 U	380 U	350 U	340 U
Hexachloroethane	330 U	380 U	350 U	340 U
Nitrobenzene	330 U	380 U	350 U	340 U
Isophorone	330 U	380 U	350 U	340 U
2-Nitrophenol	330 U	380 U	350 U	340 U
2,4-Dimethylphenol	330 U	380 U	350 U	340 U
Bis(2-chloroethoxy)methane	330 U	380 U	350 U	340 U
2,4-Dichlorophenol	330 U	380 U	350 U	340 U
1,2,4-Trichlorobenzene	330 U	380 U	350 U	340 U
Naphthalene	330 U	380 U	350 U	340 U
Hexachlorobutadiene	330 U	380 U	350 U	340 U
4-Chloro-3-methylphenol	330 U	380 U	350 U	340 U
Hexachlorocyclopentadiene	330 U	380 U	350 U	340 U
2,4,6-Trichlorophenol	330 U	380 U	350 U	340 U
2-Chloronaphthalene	330 U	380 U	350 U	340 U
Dimethyl Phthalate	330 U	380 U	350 U	340 U
Acenaphthylene	330 U	380 U	350 U	340 U
Acenaphthene	330 U	380 U	350 U	340 U
2,4-Dinitrophenol	1,600 U	1,400 U	1,700 U	1,700 U
Units	(ug/kg)	(ug/kg dw)	(ug/kg dw)	(ug/kg dw)

VIII. Analytical Results (Cont'd)

Semivolatile Organics (Page 2 of 2)

Constituent	Method Blank	Sample Designation A16894-4 609A-0301-SB01	A16894-5 609A-0301-SB02	A16894-6 609A-0301-SB03
4-Nitrophenol	1,600 U	29 J	1,700 U	1,700 U
2,4-Dinitrotoluene	330 U	380 U	350 U	340 U
2,6-Dinitrotoluene	330 U	380 U	350 U	340 U
Diethyl Phthalate	330 U	380 U	350 U	340 U
4-Chlorophenyl Phenyl Ether	330 U	380 U	350 U	340 U
Fluorene	330 U	380 U	350 U	340 U
4,6-Dinitro-2-methylphenol	1,600 U	1,400 U	1,700 U	1,700 U
N-Nitrosodiphenylamine	330 U	380 U	350 U	340 U
4-Bromophenyl Phenyl Ether	330 U	380 U	350 U	340 U
Hexachlorobenzene	330 U	380 U	350 U	340 U
Pentachlorophenol	1,600 U	1,400 U	1,700 U	1,700 U
Phenanthrene	330 U	120 J	350 U	340 U
Anthracene	330 U	27 J	350 U	340 U
Dibutyl Phthalate	22 J	30 J	19 J	340 U
Fluoranthene	330 U	150 J	350 U	340 U
Benzidine	3,200 U	3,800 U	3,500 U	3,400 U
Pyrene	330 U	190 J	350 U	340 U
Butylbenzyl Phthalate	330 U	22 J	350 U	340 U
3,3'-Dichlorobenzidine	660 U	560 U	690 U	690 U
Benzo(a)anthracene	330 U	80 J	350 U	340 U
Bis(2-ethylhexyl) Phthalate	18 J	380 U	47 J	51 J
Chrysene	330 U	96 J	350 U	340 U
Dioctyl Phthalate	330 U	380 U	350 U	340 U
Benzo(b)fluoranthene	330 U	44 J	350 U	340 U
Benzo(k)fluoranthene	330 U	57 J	350 U	340 U
Benzo(a)pyrene	330 U	67 J	350 U	340 U
Indeno(1,2,3-cd)pyrene	330 U	380 U	350 U	340 U
Dibenzo(a,h)anthracene	330 U	380 U	350 U	340 U
Benzo(g,h,i)perylene	330 U	380 U	350 U	340 U
Units	(ug/kg)	(ug/kg dw)	(ug/kg)	(ug/kg dw)

VIII. Analytical Results (Cont'd)

Semivolatile Organics (Page 1 of 2)

		Sample Designation		
Constituent	Method Blank	A16894-7 609A-0801-SB01	A16894-8 609A-0802 SB01	A16894-9 609A-0802-SB02
N-Nitrosodimethylamine	330 U	360 U	370 U	380 U
Phenol	330 U	360 U	370 U	380 U
Bis(2-chloroethyl) Ether	330 U	360 U	370 U	380 U
2-Chlorophenol	330 U	360 U	370 U	380 U
1,3-Dichlorobenzene	330 U	27 J	28 J	380 U
1,4-Dichlorobenzene	330 U	360 U	370 U	380 U
1,2-Dichlorobenzene	330 U	360 U	370 U	380 U
2-Methylphenol	330 U	360 U	370 U	380 U
Bis(2-chloroisopropyl) Ether	330 U	360 U	370 U	380 U
4-Methylphenol	330 U	360 U	370 U	380 U
N-Nitrosodipropylamine	330 U	360 U	370 U	380 U
Hexachloroethane	330 U	360 U	370 U	380 U
Nitrobenzene	330 U	360 U	370 U	380 U
Isophorone	330 U	360 U	370 U	380 U
2-Nitrophenol	330 U	360 U	370 U	380 U
2,4-Dimethylphenol	330 U	360 U	370 U	380 U
Bis(2-chloroethoxy)methane	330 U	360 U	370 U	380 U
2,4-Dichlorophenol	330 U	360 U	370 U	380 U
1,2,4-Trichlorobenzene	330 U	360 U	370 U	380 U
Naphthalene	330 U	360 U	370 U	380 U
Hexachlorobutadiene	330 U	360 U	370 U	380 U
4-Chloro-3-methylphenol	330 U	360 U	370 U	380 U
Hexachlorocyclopentadiene	330 U	360 U	370 U	380 U
2,4,6-Trichlorophenol	330 U	360 U	370 U	380 U
2-Chloronaphthalene	330 U	360 U	370 U	380 U
Dimethyl Phthalate	330 U	360 U	370 U	380 U
Acenaphthylene	330 U	360 U	370 U	380 U
Acenaphthene	330 U	360 U	370 U	380 U
2,4-Dinitrophenol	1,600 U	1,800 U	1,800 U	1,800 U
Units	(ug/kg)	(ug/kg dw)	(ug/kg dw)	(ug/kg dw)

VIII. Analytical Results (Cont'd)

Semivolatile Organics (Page 2 of 2)

		Sample Designation		
Constituent	Method Blank	A16894-7 609A-0801-SB01	A16894-8 609A-0802-SB01	A16894-9 609A-0802-SB02
4-Nitrophenol	1,600 U	1,800 U	1,800 U	1,800 U
2,4-Dinitrotoluene	330 U	360 U	370 U	380 U
2,6-Dinitrotoluene	330 U	360 U	370 U	380 U
Diethyl Phthalate	330 U	360 U	370 U	380 U
4-Chlorophenyl Phenyl Ether	330 U	360 U	370 U	380 U
Fluorene	330 U	360 U	370 U	380 U
4,6-Dinitro-2-methylphenol	1,600 U	1,800 U	1,800 U	1,800 U
N-Nitrosodiphenylamine	330 U	25 J	370 U	380 U
4-Bromophenyl Phenyl Ether	330 U	360 U	370 U	380 U
Hexachlorobenzene	330 U	360 U	370 U	380 U
Pentachlorophenol	1,600 U	1,800 U	1,800 U	1,800 U
Phenanthrene	330 U	360 U	24 J	380 U
Anthracene	330 U	360 U	370 U	380 U
Dibutyl Phthalate	22 J	360 U	370 U	380 U
Fluoranthene	330 U	360 U	51 J	380 U
Benzidine	3,200 U	3,600 U	3,700 U	3,800 U
Pyrene	330 U	360 U	50 J	380 U
Butylbenzyl Phthalate	330 U	360 U	32 J	380 U
3,3'-Dichlorobenzidine	660 U	730 U	740 U	760 U
Benzo(a)anthracene	330 U	360 U	32 J	380 U
Bis(2-ethylhexyl) Phthalate	18 J	83 J	100 J	99 J
Chrysene	330 U	360 U	35 J	380 U
Dioctyl Phthalate	330 U	360 U	370 U	380 U
Benzo(b)fluoranthene	330 U	360 U	44 J	380 U
Benzo(k)fluoranthene	330 U	360 U	370 U	380 U
Benzo(a)pyrene	330 U	360 U	25 J	380 U
Indeno(1,2,3-cd)pyrene	330 U	360 U	27 J	380 U
Dibenzo(a,h)anthracene	330 U	360 U	370 U	380 U
Benzo(g,h,i)perylene	330 U	360 U	370 U	380 U
Units	(ug/kg)	(ug/kg dw)	(ug/kg dw)	(ug/kg dw)

VIII. Analytical Results (Cont'd)

Polychlorinated Biphenyls

		Sample Designation		
Constituent	Method Blank	A16894-1 609A-0201-SB01	A16894-2 609A-0201-SB02	A16894-3 609A-0201-SB03
Aroclor 1016	330 U	340 U	410 U	360 U
Aroclor 1221	330 U	340 U	410 U	360 U
Aroclor 1232	330 U	340 U	410 U	360 U
Aroclor 1242	330 U	340 U	410 U	360 U
Aroclor 1248	330 U	340 U	410 U	360 U
Aroclor 1254	330 U	340 U	410 U	360 U
Aroclor 1260	330 U	340 U	410 U	360 U
Units	(ug/kg)	(ug/kg dw)	(ug/kg dw)	(ug/kg dw)

VIII. Analytical Results (Cont'd)

Pesticidal Compounds and Polychlorinated Biphenyls

Constituent	Method Blank	Sample Designation A16894-4 609A-0301-SB01	A16894-5 609A-0301-SB02	A16894-6 609A-0301-SB03
alpha-BHC	330 U	390 U	350 U	340 U
beta-BHC	330 U	390 U	350 U	340 U
delta-BHC	330 U	390 U	350 U	340 U
gamma-BHC (Lindane)	330 U	390 U	350 U	340 U
Heptachlor	330 U	390 U	350 U	340 U
Aldrin	330 U	390 U	350 U	340 U
Heptachlor Epoxide	330 U	390 U	350 U	340 U
Endosulfan I	330 U	390 U	350 U	340 U
Dieldrin	330 U	390 U	350 U	340 U
4,4'-DDE	330 U	390 U	350 U	340 U
Endrin	330 U	390 U	350 U	340 U
Endosulfan II	330 U	390 U	350 U	340 U
4,4'-DDD	330 U	390 U	350 U	340 U
Endosulfan Sulfate	330 U	390 U	350 U	340 U
4,4'-DDT	330 U	390 U	350 U	340 U
Endrin Aldehyde	330 U	390 U	350 U	340 U
Chlordane	330 U	390 U	350 U	340 U
Toxaphene	330 U	390 U	350 U	340 U
Aroclor 1016	330 U	390 U	350 U	340 U
Aroclor 1221	330 U	390 U	350 U	340 U
Aroclor 1232	330 U	390 U	350 U	340 U
Aroclor 1242	330 U	390 U	350 U	340 U
Aroclor 1248	330 U	390 U	350 U	340 U
Aroclor 1254	330 U	390 U	350 U	340 U
Aroclor 1260	330 U	390 U	350 U	340 U
Units	(ug/kg)	(ug/kg dw)	(ug/kg dw)	(ug/kg dw)

VIII. Analytical Results (Cont'd)

Pesticidal Compounds and Polychlorinated Biphenyls

		Sample Designation		
Constituent	Method Blank	A16894-7 609A-0801-SB01	A16894-8 609A-0802-SB01	A16894-9 609A-0802-SB02
alpha-BHC	330 U	360 U	370 U	380 U
beta-BHC	330 U	360 U	370 U	380 U
delta-BHC	330 U	360 U	370 U	380 U
gamma-BHC (Lindane)	330 U	360 U	370 U	380 U
Heptachlor	330 U	360 U	370 U	380 U
Aldrin	330 U	360 U	370 U	380 U
Heptachlor Epoxide	330 U	360 U	370 U	380 U
Endosulfan I	330 U	360 U	370 U	380 U
Dieldrin	330 U	360 U	370 U	380 U
4,4'-DDE	330 U	360 U	370 U	380 U
Endrin	330 U	360 U	370 U	380 U
Endosulfan II	330 U	360 U	370 U	380 U
4,4'-DDD	330 U	360 U	370 U	380 U
Endosulfan Sulfate	330 U	360 U	370 U	380 U
4,4'-DDT	330 U	360 U	370 U	380 U
Endrin Aldehyde	330 U	360 U	370 U	380 U
Chlordane	330 U	360 U	370 U	380 U
Toxaphene	330 U	360 U	370 U	380 U
Aroclor 1016	330 U	360 U	370 U	380 U
Aroclor 1221	330 U	360 U	370 U	380 U
Aroclor 1232	330 U	360 U	370 U	380 U
Aroclor 1242	330 U	360 U	370 U	380 U
Aroclor 1248	330 U	360 U	37 J	380 U
Aroclor 1254	330 U	360 U	370 U	380 U
Aroclor 1260	330 U	360 U	370 U	380 U
Units	(ug/kg)	(ug/kg dw)	(ug/kg dw)	(ug/kg dw)

VIII. Analytical Results (Cont'd)

Metals

Parameter	Method Blank	Sample Designation A16894-1 609A-0201-SB01	A16894-2 609A-0201-SB02	A16894-3 609A-0201-SB03
Antimony, total	2,000 U	2,100	2,500 U	2,200 U
Arsenic, total	1,000 U	1,400	5,100	12,000
Beryllium, total	500 U	1,200	890	740
Cadmium, total	1,000 U	2,900	2,800	1,500
Chromium, total	5,000 U	17,000	25,000	8,600
Copper, total	5,000 U	10,000	9,300	5,100
Lead, total	10,000 U	20,000	21,000	8,900 J
Mercury, total	200 U	210 U	250 U	220 J
Nickel, total	4,000 U	7,300	7,400	3,500 J
Selenium, total	1,000 U	1,100 U	1,200 U	450 J
Silver, total	5,000 U	2,100 J	1,600 J	1,300 J
Thallium, total	1,000 U	1,100 U	1,200 U	1,100 U
Zinc, total	2,000 U	28,000	63,000	1[illegible],000
Units	(ug/kg)	(ug/kg dw)	(ug/kg dw)	(ug/kg dw)

Parameter	Sample Designation A16894-4 609A-0301-SB01	A16894-5 609A-0301-SB02	A16894-6 609A-0301-SB03
Antimony, total	2,400 U	2,100 U	2,100 U
Arsenic, total	5,200	2,500	1,800
Beryllium, total	750	390	400 J
Cadmium, total	2,100	690	710 J
Chromium, total	13,000	11,000	13,000
Copper, total	6,100	2,600 J	3,000 J
Lead, total	14,000	11,000 U	10,000 U
Mercury, total	240 U	210 U	210 U
Nickel, total	5,100	3,700 J	3,100 J
Selenium, total	1,200 U	1,100 U	1,100 U
Silver, total	1,100 J	1,200 J	1,300 J
Thallium, total	1,200 U	1,100 U	1,100 U
Zinc, total	24,000	7,400	12,000
Units	(ug/kg dw)	(ug/kg dw)	(ug/kg dw)

VIII. Analytical Results (Cont'd)

Metals

Parameter	Method Blank	A16894-7 609A-0801-SB01	A16894-8 609A-0802-SB01	A16894-9 609A-0802-SB02
		Sample Designation		
Antimony, total	2,000 U	2,200 U	2,200 U	2,300 U
Arsenic, total	1,000 U	2,800	12,000	7,100
Beryllium, total	500 U	530	830	780
Cadmium, total	1,000 U	1,700	1,300	1,600
Chromium, total	5,000 U	11,000	9,500	14,000
Copper, total	5,000 U	4,900	7,700	5,200
Lead, total	10,000 U	11,000	21,000	11,000 U
Mercury, total	200 U	220 U	220 U	230 U
Nickel, total	4,000 U	4,500	6,600	4,700
Selenium, total	1,000 U	1,100 U	1,100 U	1,100 U
Silver, total	5,000 U	1,100 J	1,200 J	4,600 U
Thallium, total	1,000 U	1,100 U	1,100 U	1,100 U
Zinc, total	2,000 U	14,000	23,000	7,500
Units	(ug/kg)	(ug/kg dw)	(ug/kg dw)	(ug/kg dw)

VIII. Analytical Results (Cont'd)

General Chemistry

	Parameter			
Sample Designation	Cyanide, total	Phenolics, total as phenol	Petroleum Hydrocarbons, by IR	Residue, total
Method Blank	250 U	250 U	20,000 U	0.1 U
A16894-1 609A-0201-SB01	NR	NR	100,000	96
A16894-2 609A-0201-SB02	NR	NR	25,000	81
A16894-3 609A-0201-SB03	NR	NR	22,000	91
A16894-4 609A-0301-SB01	290 U	290 U	24,000	85
A16894-5 609A-0301-SB02	260 U	260 U	21,000	95
A16894-6 609A-0301-SB03	260 U	260 U	21,000	96
A16894-7 609A-0801-SB01	270 U	270 U	NR	91
A16894-8 609A-0802-SB01	280 U	280 U	NR	89
A16894-9 609A-0802-SB02	290 U	290 U	NR	87
Units	(ug/kg dw)	(ug/kg dw)	(ug/kg dw)	(%)

VIII. Analytical Results (Cont'd)

EPA/NIH/NBS Nontargetted Library Search

No nontargetted compounds were detected in the following samples:

Volatile Aqueous Method Blank
Volatile Nonaqueous Method Blank 1, 2, 3
A16894-10 609A-880801-TB

AnalytiKEM Designation: Semivolatile Method Blank

Client Designation: --

CAS Number	Compound Name	Fraction	Scan Number	Estimated Concentration (ug/l or ug/kg dw)
	Unknown Ketone	BNA	308	260
	Unknown Compound	BNA	1,933	1,600

AnalytiKEM Designation: A16894-1

Client Designation: 609A-0201-SB01

CAS Number	Compound Name	Fraction	Scan Number	Estimated Concentration (ug/kg dw)
	None Detected	VOA	--	--
	Unknown Compound	BNA	695	5,100
108-94-1	Cyclohexanone	BNA	448	9,000
	Unknown Compound	BNA	511	9,000
	Unknown Alcohol	BNA	586	29,000
	Unknown Compound	BNA	591	11,000
	Unknown Compound	BNA	629	8,700
	Unknown Compound	BNA	640	24,000
	Unknown Compound	BNA	645	30,000

Note: Estimated concentration is calculated against the nearest eluting internal standard.

VIII. Analytical Results (Cont'd)

EPA/NIH/NBS Nontargetted Library Search

AnalytiKEM Designation A16894-1 (Cont'd)

Client Designation 609A-0201-SB01

CAS Number	Compound Name	Fraction	Scan Number	Estimated Concentration (ug/kg dw)
	Unknown Compound	BNA	713	6,300
	Unknown Compound	BNA	759	7,200
	Unknown Compound	BNA	815	9,000
	Unknown Compound	BNA	1,126	5,900
	Unknown Compound	BNA	1,213	19,000
	Unknown Compound	BNA	1,259	5,100
	Unknown Compound	BNA	1,438	20,000
	Unknown Compound	BNA	1,610	40,000
	Unknown Compound	BNA	1,749	10,000
	Unknown Compound	BNA	1,766	42,000
	Unknown Alkane	BNA	1,790	15,000
	Unknown Alkane	BNA	1,989	5,500
	Unknown Alkane	BNA	2,125	9,300
	Unknown Compound	BNA	2,157	4,400
	Unknown Compound	BNA	2,169	11,000
	Unknown Alkane	BNA	2,175	4,500

Note: Estimated concentration is calculated against the nearest eluting internal standard.

VIII. Analytical Results (Cont'd)

EPA/NIH/NBS Nontargetted Library Search

AnalytiKEM Designation A16894-2

Client Designation 609A-0201-SB02

CAS Number	Compound Name	Fraction	Scan Number	Estimated Concentration (ug/kg dw)
	None Detected	VOA	--	--
	Unknown Ketone	BNA	304	260
	Unknown Compound	BNA	460	190
	Unknown Compound	BNA	2,252	1,200

AnalytiKEM Designation A16894-3

Client Designation 609A-0201-SB03

CAS Number	Compound Name	Fraction	Scan Number	Estimated Concentration (ug/kg dw)
	None Detected	VOA	--	--
	Unknown Ketone	BNA	299	230
	Unknown Compound	BNA	2,166	230
	Unknown Alkane	BNA	2,123	160
	Unknown Compound	BNA	2,253	460

Note: Estimated concentration is calculated against the nearest eluting internal standard.

VIII. Analytical Results (Cont'd)

EPA/NIH/NBS Nontargetted Library Search

AnalytiKEM Designation A16894-4

Client Designation 609A-0301-SB01

CAS Number	Compound Name	Fraction	Scan Number	Estimated Concentration (ug/kg dw)
	None Detected	VOA	--	--
	Unknown Compound	BNA	261	3,400
	Unknown Compound	BNA	311	2,600
	Unknown Compound	BNA	346	190
	Unknown Compound	BNA	437	530
	Unknown Compound	BNA	445	180
	Unknown Compound	BNA	520	200
	Unknown Compound	BNA	1,207	200
	Unknown Compound	BNA	1,601	180
	Unknown Alkane	BNA	1,989	190
	Unknown Phthalate Ester	BNA	2,031	230
	Unknown Compound	BNA	2,247	1,500
	Unknown Alkane	BNA	2,304	500
	Unknown Alkane	BNA	2,564	420
	Unknown Compound	BNA	2,952	150

Note: Estimated concentration is calculated against the nearest eluting internal standard.

VIII. Analytical Results (Cont'd)

EPA/NIH/NBS Nontargetted Library Search

AnalytiKEM Designation A16894-5

Client Designation 609A-0301-SB02

CAS Number	Compound Name	Fraction	Scan Number	Estimated Concentration (ug/kg dw)
	None Detected	VOA	--	--
	Unknown Compound	BNA	272	130
	Unknown Compound	BNA	442	690
	Unknown Compound	BNA	2,247	340

AnalytiKEM Designation A16894-6

Client Designation 609A-0301-SB03

CAS Number	Compound Name	Fraction	Scan Number	Estimated Concentration (ug/kg dw)
	None Detected	VOA	--	--
	Unknown Compound	BNA	271	180
	Unknown Compound	BNA	441	300
	Unknown Compound	BNA	2,246	1,300

Note: Estimated concentration is calculated against the nearest eluting internal standard.

VIII. Analytical Results (Cont'd)

EPA/NIH/NBS Nontargetted Library Search

AnalytiKEM Designation A16894-7

Client Designation 609A-0801-SB01

CAS Number	Compound Name	Fraction	Scan Number	Estimated Concentration (ug/kg dw)
	None Detected	VOA	--	--
	Unknown Compound	BNA	307	260
	Unknown Compound	BNA	461	210
	Unknown Compound	BNA	2,245	2,000

AnalytiKEM Designation A16894-8

Client Designation 609A-0802-SB01

CAS Number	Compound Name	Fraction	Scan Number	Estimated Concentration (ug/kg dw)
	None Detected	VOA	--	--
	Unknown Compound	BNA	307	4,500
	Unknown Compound	BNA	352	4,300
	Unknown Compound	BNA	380	380
	Unknown Compound	BNA	460	220
	Unknown Compound	BNA	468	290

Note: Estimated concentration is calculated against the nearest eluting internal standard.

VIII. Analytical Results (Cont'd)

EPA/NIH/NBS Nontargetted Library Search

AnalytiKEM Designation A16894-8 (Cont'd)

Client Designation 609A-0802-SB01

CAS Number	Compound Name	Fraction	Scan Number	Estimated Concentration (ug/kg dw)
	Unknown Aromatic	BNA	472	170
	Unknown Compound	BNA	492	160
	Unknown Compound	BNA	1,341	210
	Unknown Compound	BNA	1,592	350
	Unknown Compound	BNA	1,599	700
	Unknown Compound	BNA	1,945	180
	Unknown Compound	BNA	1,986	220
	Unknown Compound	BNA	2,122	160
	Unknown Compound	BNA	2,244	1,000
	Unknown Alkane	BNA	2,301	930
	Unknown Compound	BNA	2,480	180
	Unknown Alkane	BNA	2,559	890
	Unknown Compound	BNA	2,948	160
	Unknown Compound	BNA	3,084	330

Note: Estimated concentration is calculated against the nearest eluting internal standard.

VIII. Analytical Results (Cont'd)

EPA/NIH/NBS Nontargetted Library Search

AnalytiKEM Designation A16894-9

Client Designation 609A-0802-SB02

CAS Number	Compound Name	Fraction	Scan Number	Estimated Concentration (ug/kg dw)
	None Detected	BNA	--	--
	Unknown Compound	BNA	250	230
	Unknown Compound	BNA	303	1,100
	Unknown Compound	BNA	348	720
	Unknown Compound	3NA	2,244	430
	Unknown Compound	BNA	2,260	370

Note: Estimated concentration is calculated against the nearest eluting internal standard.

VIII. Analytical Results

Volatile Organics

Constituent	Nonaqueous Method Blank 1	A16918-5 609A-1201-SB01	A16918-9 609A-0101-SB01
	Sample Designation		
Chloromethane	330 U	370 U	440 U
Bromomethane	330 U	370 U	440 U
Vinyl Chloride	330 U	370 U	440 U
Chloroethane	330 U	370 U	440 U
Methylene Chloride	120 J	740	440 U
1,1-Dichloroethene	330 U	370 U	440 U
1,1-Dichloroethane	330 U	370 U	440 U
trans-1,2-Dichloroethene	330 U	370 U	440 U
Chloroform	330 U	370 U	440 U
1,2-Dichloroethane	330 U	370 U	440 U
1,1,1-Trichloroethane	330 U	370 U	440 U
Carbon Tetrachloride	330 U	370 U	440 U
Bromodichloromethane	330 U	370 U	440 U
1,2-Dichloropropane	330 U	370 U	440 U
trans-1,3-Dichloropropene	330 U	370 U	440 U
Trichloroethene	330 U	370 U	440 U
Dibromochloromethane	330 U	370 U	440 U
1,1,2-Trichloroethane	330 U	370 U	440 U
Benzene	330 U	370 U	440 U
cis-1,3-Dichloropropene	330 U	370 U	440 U
2-Chloroethyl Vinyl Ether	330 U	370 U	440 U
Bromoform	330 U	370 U	440 U
Tetrachloroethene	330 U	370 U	440 U
1,1,2,2-Tetrachloroethane	330 U	370 U	440 U
Toluene	270 J	900	440 U
Chlorobenzene	330 U	370 U	440 U
Ethylbenzene	330 U	370 U	440 U
m-Xylene	330 U	370 U	440 U
o,p-Xylene	330 U	370 U	440 U
Units	(ug/kg)	(ug/kg dw)	(ug/kg dw)

VIII. Analytical Results (Cont'd)

Volatile Organics

Constituent	Nonaqueous Method Blank 1	A16918-10 609A-0101-SB02	A16918-11 609A-1001-SB01
	Sample Designation		
Chloromethane	330 U	450 U	380 U
Bromomethane	330 U	450 U	380 U
Vinyl Chloride	330 U	450 U	380 U
Chloroethane	330 U	450 U	380 U
Methylene Chloride	120 J	450 U	380 U
1,1-Dichloroethene	330 U	450 U	380 U
1,1-Dichloroethane	330 U	450 U	380 U
trans-1,2-Dichloroethene	330 U	450 U	380 U
Chloroform	330 U	450 U	380 U
1,2-Dichloroethane	330 U	450 U	380 U
1,1,1-Trichloroethane	330 U	450 U	7,600
Carbon Tetrachloride	330 U	450 U	380 U
Bromodichloromethane	330 U	450 U	380 U
1,2-Dichloropropane	330 U	450 U	380 U
trans-1,3-Dichloropropene	330 U	450 U	380 U
Trichloroethene	330 U	450 U	380 U
Dibromochloromethane	330 U	450 U	380 U
1,1,2-Trichloroethane	330 U	450 U	380 U
Benzene	330 U	450 U	380 U
cis-1,3-Dichloropropene	330 U	450 U	380 U
2-Chloroethyl Vinyl Ether	330 U	450 U	380 U
Bromoform	330 U	450 U	380 U
Tetrachloroethene	330 U	450 U	7,300
1,1,2,2-Tetrachloroethane	330 U	450 U	380 U
Toluene	270 J	450 U	380 U
Chlorobenzene	330 U	450 U	380 U
Ethylbenzene	330 U	450 U	380 U
m-Xylene	330 U	450 U	380 U
o,p-Xylene	330 U	450 U	380 U
Units	(ug/kg)	(ug/kg dw)	(ug/kg dw)

VIII. Analytical Results (Cont'd)

Volatile Organics

Constituent	Aqueous Method Blank	A16918-15 609A-0801-WB01	A16918-24 609A-0503-WB01
		Sample Designation	
Chloromethane	10 U	10 U	10 U
Bromomethane	10 U	10 U	10 U
Vinyl Chloride	10 U	10 U	10 U
Chloroethane	10 U	10 U	10 U
Methylene Chloride	10 U	5.0 J	5.0 J
1,1-Dichloroethene	10 U	10 U	10 U
1,1-Dichloroethane	10 U	10 U	10 U
trans-1,2-Dichloroethene	10 U	10 U	10 U
Chloroform	10 U	10 U	10 U
1,2-Dichloroethane	10 U	10 U	10 U
1,1,1-Trichloroethane	10 U	10 U	10 U
Carbon Tetrachloride	10 U	50 U	10 U
Bromodichloromethane	10 U	10 U	10 U
1,2-Dichloropropane	10 U	10 U	10 U
trans-1,3-Dichloropropene	10 U	10 U	10 U
Trichloroethene	10 U	10 U	10 U
Dibromochloromethane	10 U	10 U	10 U
1,1,2-Trichloroethane	10 U	10 U	10 U
Benzene	10 U	10 U	10 U
cis-1,3-Dichloropropene	10 U	10 U	10 U
2-Chloroethyl Vinyl Ether	10 U	10 U	10 U
Bromoform	10 U	10 U	10 U
Tetrachloroethene	10 U	10 U	10 U
1,1,2,2-Tetrachloroethane	10 U	10 U	10 U
Toluene	10 U	10 U	10 U
Chlorobenzene	10 U	10 U	10 U
Ethylbenzene	10 U	10 U	10 U
m-Xylene	10 U	10 U	10 U
o,p-Xylene	10 U	10 U	10 U
Units	(ug/l)	(ug/l)	(ug/l)

VIII. Analytical Results (Cont'd)

Volatile Organics

Constituent	Nonaqueous Method Blank 2	A16918-12 609A-1001-SB02	A16918-13 609A-1002-SB01	A16918-14 609A-1002-SB02
		Sample Designation		
Chloromethane	330 U	410 U	380 U	460 U
Bromomethane	330 U	410 U	380 U	460 U
Vinyl Chloride	330 U	410 U	380 U	460 U
Chloroethane	330 U	410 U	380 U	460 U
Methylene Chloride	330 U	210 J	380 U	460 U
1,1-Dichloroethene	330 U	410 U	380 U	460 U
1,1-Dichloroethane	330 U	410 U	380 U	460 U
trans-1,2-Dichloroethene	330 U	410 U	380 U	460 U
Chloroform	330 U	410 U	380 U	460 U
1,2-Dichloroethane	330 U	410 U	380 U	460 U
1,1,1-Trichloroethane	330 U	410 U	380 U	460 U
Carbon Tetrachloride	330 U	410 U	380 U	460 U
Bromodichloromethane	330 U	410 U	380 U	460 U
1,2-Dichloropropane	330 U	410 U	380 U	460 U
trans-1,3-Dichloropropene	330 U	410 U	380 U	460 U
Trichloroethene	330 U	410 U	380 U	460 U
Dibromochloromethane	330 U	410 U	380 U	460 U
1,1,2-Trichloroethane	330 U	410 U	380 U	460 U
Benzene	330 U	410 U	380 U	460 U
cis-1,3-Dichloropropene	330 U	410 U	380 U	460 U
2-Chloroethyl Vinyl Ether	330 U	410 U	380 U	460 U
Bromoform	330 U	410 U	380 U	460 U
Tetrachloroethene	330 U	410 U	380 U	460 U
1,1,2,2-Tetrachloroethane	330 U	410 U	380 U	460 U
Toluene	330 U	620	380 U	460 U
Chlorobenzene	30 U	410 U	380 U	460 U
Ethylbenzene	330 U	410 U	380 U	460 U
m-Xylene	330 U	410 U	380 U	460 U
o,p-Xylene	330 U	410 U	380 U	460 U
Units	(ug/kg)	(ug/kg dw)	(ug/kg dw)	(ug/kg dw)

VIII. Analytical Results (Cont'd)

Volatile Organics

		Sample Designation	
Constituent	Nonaqueous Method Blank 3	A16918-7 609A-0901-SB01	A16918-8 609A-0901-SB02
Chloromethane	330 U	390 U	400 U
Bromomethane	330 U	390 U	400 U
Vinyl Chloride	330 U	390 U	400 U
Chloroethane	330 U	390 U	400 U
Methylene Chloride	330 U	390 U	180 J
1,1-Dichloroethene	330 U	390 U	400 U
1,1-Dichloroethane	330 U	390 U	400 U
trans-1,2-Dichloroethene	330 U	390 U	400 U
Chloroform	330 U	390 U	400 U
1,2-Dichloroethane	330 U	390 U	400 U
1,1,1-Trichloroethane	330 U	390 U	400 U
Carbon Tetrachloride	330 U	390 U	400 U
Bromodichloromethane	330 U	390 U	400 U
1,2-Dichloropropane	330 U	390 U	400 U
trans-1,3-Dichloropropene	330 U	390 U	400 U
Trichloroethene	330 U	390 U	400 U
Dibromochloromethane	330 U	390 U	400 U
1,1,2-Trichloroethane	330 U	390 U	400 U
Benzene	330 U	390 U	400 U
cis-1,3-Dichloropropene	330 U	390 U	400 U
2-Chloroethyl Vinyl Ether	330 U	390 U	400 U
Bromoform	330 U	390 U	400 U
Tetrachloroethene	330 U	390 U	400 U
1,1,2,2-Tetrachloroethane	330 U	390 U	400 U
Toluene	330 U	390 U	400 U
Chlorobenzene	330 U	390 U	400 U
Ethylbenzene	330 U	390 U	400 U
m-Xylene	330 U	390 U	400 U
o,p-Xylene	330 U	390 U	400 U
Units	(ug/kg)	(ug/kg dw)	(ug/kg dw)

VII. Analytical Results (Cont'd)

Semivolatile Organics-Base Neutrals (Page 1 of 2)

Constituent	Aqueous Method Blank	A16918-6 609A-1401-SW01
	Sample Designation	
N-Nitrosodimethylamine	10 U	10 U
Bis(2-chloroethyl) Ether	10 U	10 U
1,3-Dichlorobenzene	10 U	10 U
1,4-Dichlorobenzene	10 U	10 U
1,2-Dichlorobenzene	10 U	10 U
Bis(2-chloroisopropyl) Ether	10 U	10 U
N-Nitrosodipropylamine	10 U	10 U
Hexachloroethane	10 U	10 U
Nitrobenzene	10 U	10 U
Isophorone	10 U	10 U
Bis(2-chloroethoxy)methane	10 U	10 U
1,2,4-Trichlorobenzene	10 U	10 U
Naphthalene	10 U	10 U
Hexachlorobutadiene	10 U	10 U
Hexachlorocyclopentadiene	10 U	10 U
2-Chloronaphthalene	10 U	10 U
Dimethyl Phthalate	10 U	10 U
Acenaphthylene	10 U	10 U
Acenaphthene	10 U	10 U
Units	(ug/l)	(ug/l)

VIII. Analytical Results (Cont'd)

Semivolatile Organics (Page 2 of 2)

	Sample Designation	
Constituent	Method Blank	A16894-6 609A-1401-SW01
2,4-Dinitrotoluene	10 U	10 U
2,6-Dinitrotoluene	10 U	10 U
Diethyl Phthalate	10 U	10 U
4-Chlorophenyl Phenyl Ether	10 U	10 U
Fluorene	10 U	10 U
N-Nitrosodiphenylamine	10 U	10 U
4-Bromophenyl Phenyl Ether	10 U	10 U
Hexachlorobenzene	10 U	10 U
Phenanthrene	10 U	0.5 J
Anthracene	10 U	10 U
Dibutyl Phthalate	10 U	10 U
Fluoranthene	10 U	0.8 J
Benzidine	100 U	100 U
Pyrene	10 U	0.6 J
Butylbenzyl Phthalate	10 U	10 U
3,3'-Dichlorobenzidine	20 U	20 U
Benzo(a)anthracene	10 U	10 U
Bis(2-ethylhexyl) Phthalate	10 U	19
Chrysene	10 U	10 U
Dioctyl Phthalate	10 U	10 U
Benzo(b)fluoranthene	10 U	10 U
Benzo(k)fluoranthene	10 U	10 U
Benzo(a)pyrene	10 U	10 U
Indeno(1,2,3-cd)pyrene	10 U	10 U
Dibenzo(a,h)anthracene	10 U	10 U
Benzo(g,h,i)perylene	10 U	10 U
Units	(ug/l)	(ug/l)

VIII. Analytical Results (Cont'd)

Semivolatile Organics (Page 1 of 2)

Constituent	Nonaqueous Method Blank	A16918-1 609A-0504-SB01	A16918-5 609A-1201 SB01	A16918-7 609A-0901-SB01
		Sample Designation		
N-Nitrosodimethylamine	330 U	460 U	3,700 U	400 U
Phenol	330 U	460 U	3,700 U	400 U
Bis(2-chloroethyl) Ether	330 U	460 U	3,700 U	400 U
2-Chlorophenol	330 U	460 U	3,700 U	400 U
1,3-Dichlorobenzene	330 U	460 U	3,700 U	400 U
1,4-Dichlorobenzene	330 U	460 U	3,700 U	400 U
1,2-Dichlorobenzene	330 U	460 U	3,700 U	400 U
2-Methylphenol	330 U	460 U	3,700 U	400 U
Bis(2-chloroisopropyl) Ether	330 U	460 U	3,700 U	400 U
4-Methylphenol	330 U	460 U	3,700 U	400 U
N-Nitrosodipropylamine	330 U	460 U	3,700 U	400 U
Hexachloroethane	330 U	460 U	3,700 U	400 U
Nitrobenzene	330 U	460 U	3,700 U	400 U
Isophorone	330 U	460 U	3,700 U	400 U
2-Nitrophenol	330 U	460 U	3,700 U	400 U
2,4-Dimethylphenol	330 U	460 U	3,700 U	400 U
Bis(2-chloroethoxy)methane	330 U	460 U	3,700 U	400 U
2,4-Dichlorophenol	330 U	460 U	3,700 U	400 U
1,2,4-Trichlorobenzene	330 U	460 U	3,700 U	400 U
Naphthalene	330 U	460 U	3,700 U	400 U
Hexachlorobutadiene	330 U	460 U	3,700 U	400 U
4-Chloro-3-methylphenol	330 U	460 U	3,700 U	400 U
Hexachlorocyclopentadiene	330 U	460 U	3,700 U	400 U
2,4,6-Trichlorophenol	330 U	460 U	3,700 U	400 U
2-Chloronaphthalene	330 U	460 U	3,700 U	400 U
Dimethyl Phthalate	330 U	460 U	3,700 U	400 U
Acenaphthylene	330 U	460 U	3,700 U	400 U
Acenaphthene	330 U	460 U	1,100 J	400 U
2,4-Dinitrophenol	1,600 U	2,200 U	18,000 U	1,900 U
Units	(ug/kg)	(ug/kg dw)	(ug/kg dw)	(ug/kg dw)

VIII. Analytical Results (Cont'd)

Semivolatile Organics (Page 2 of 2)

Constituent	Nonaqueous Method Blank	Sample Designation A16918-1 609A-0504-SB01	A16918-5 609A-1201-SB02	A16918-7 609A-0901-SB01
4-Nitrophenol	1,600 U	2,200 U	18,000 U	1,900 U
2,4-Dinitrotoluene	330 U	460 U	3,700 U	400 U
2,6-Dinitrotoluene	330 U	460 U	3,700 U	400 U
Diethyl Phthalate	330 U	460 U	3,700 U	400 U
4-Chlorophenyl Phenyl Ether	330 U	460 U	3,700 U	400 U
Fluorene	330 U	460 U	3,700 U	400 U
4,6-Dinitro-2-methylphenol	1,600 U	2,200 U	18,000 U	1,900 U
N-Nitrosodiphenylamine	330 U	460 U	3,700 U	400 U
4-Bromophenyl Phenyl Ether	330 U	460 U	3,700 U	400 U
Hexachlorobenzene	330 U	460 U	3,700 U	400 U
Pentachlorophenol	1,600 U	2,200 U	18,000 U	1,900 U
Phenanthrene	330 U	460 U	13,000	43 J
Anthracene	330 U	460 U	3,000 J	400 U
Dibutyl Phthalate	330 U	460 U	3,700 U	400 U
Fluoranthene	330 U	460 U	19,000	86 J
Benzidine	3,300 U	4,600 U	37,000 U	4,000 U
Pyrene	330 U	460 U	17,000	71 J
Butylbenzyl Phthalate	330 U	460 U	290 J	400 U
3,3'-Dichlorobenzidine	660 U	920 U	7,100 U	800 U
Benzo(a)anthracene	330 U	460 U	9,300	40 J
Bis(2-ethylhexyl) Phthalate	330 U	460 U	1,600 J	110 J
Chrysene	330 U	460 U	13,000	52 J
Dioctyl Phthalate	330 U	460 U	3,700 U	400 U
Benzo(b)fluoranthene	330 U	460 U	5,100	400 U
Benzo(k)fluoranthene	330 U	460 U	3,700 U	400 U
Benzo(a)pyrene	330 U	460 U	3,700 U	400 U
Indeno(1,2,3-cd)pyrene	330 U	460 U	2,000 J	400 U
Dibenzo(a,h)anthracene	330 U	460 U	3,700 U	400 U
Benzo(g,h,i)perylene	330 U	460 U	4,300	400 U
Units	(ug/kg)	(ug/kg dw)	(ug/kg dw)	(ug/kg dw)

VIII. Analytical Results (Cont'd)

Semivolatile Organics (Page 1 of 2)

	Sample Designation			
Constituent	Nonaqueous Method Blank	A16918-8 609A-0901-SB02	A16918-9 609A-0101 SB01	A16918-10 609A-0101-SB02
N-Nitrosodimethylamine	330 U	400 U	440 U	450 U
Phenol	330 U	400 U	440 U	450 U
Bis(2-chloroethyl) Ether	330 U	400 U	440 U	450 U
2-Chlorophenol	330 U	400 U	440 U	450 U
1,3-Dichlorobenzene	330 U	70 J	440 U	450 U
1,4-Dichlorobenzene	330 U	400 U	440 U	450 U
1,2-Dichlorobenzene	330 U	400 U	440 U	450 U
2-Methylphenol	330 U	400 U	440 U	450 U
Bis(2-chloroisopropyl) Ether	330 U	400 U	440 U	450 U
4-Methylphenol	330 U	400 U	440 U	450 U
N-Nitrosodipropylamine	330 U	400 U	440 U	450 U
Hexachloroethane	330 U	400 U	440 U	450 U
Nitrobenzene	330 U	400 U	440 U	450 U
Isophorone	330 U	400 U	440 U	450 U
2-Nitrophenol	330 U	400 U	440 U	450 U
2,4-Dimethylphenol	330 U	400 U	440 U	450 U
Bis(2-chloroethoxy)methane	330 U	400 U	440 U	450 U
2,4-Dichlorophenol	330 U	400 U	440 U	450 U
1,2,4-Trichlorobenzene	330 U	400 U	440 U	450 U
Naphthalene	330 U	400 U	440 U	450 U
Hexachlorobutadiene	330 U	400 U	440 U	450 U
4-Chloro-3-methylphenol	330 U	400 U	440 U	450 U
Hexachlorocyclopentadiene	330 U	400 U	440 U	450 U
2,4,6-Trichlorophenol	330 U	400 U	440 U	450 U
2-Chloronaphthalene	330 U	400 U	440 U	450 U
Dimethyl Phthalate	330 U	400 U	440 U	450 U
Acenaphthylene	330 U	400 U	440 U	450 U
Acenaphthene	330 U	400 U	440 U	450 U
2,4-Dinitrophenol	1,600 U	1,900 U	2,100 U	2,200 U
Units	(ug/kg)	(ug/kg dw)	(ug/kg dw)	(ug/kg dw)

VIII. Analytical Results (Cont'd)

Semivolatile Organics (Page 2 of 2)

	Sample Designation			
Constituent	Nonaqueous Method Blank	A16918-8 609A-0901-SB02	A16918-9 609A-0101-SB01	A16918-10 609A-0101-SB02
4-Nitrophenol	1,600 U	1,900 U	2,100 U	2,200 U
2,4-Dinitrotoluene	330 U	400 U	440 U	450 U
2,6-Dinitrotoluene	330 U	400 U	440 U	450 U
Diethyl Phthalate	330 U	400 U	440 U	450 U
4-Chlorophenyl Phenyl Ether	330 U	400 U	440 U	450 U
Fluorene	330 U	400 U	440 U	450 U
4,6-Dinitro-2-methylphenol	1,600 U	1,900 U	2,100 U	2,200 U
N-Nitrosodiphenylamine	330 U	400 U	440 U	48 J
4-Bromophenyl Phenyl Ether	330 U	400 U	440 U	450 U
Hexachlorobenzene	330 U	400 U	440 U	450 U
Pentachlorophenol	1,600 U	1,900 U	2,100 U	2,200 U
Phenanthrene	330 U	400 U	440 U	450 U
Anthracene	330 U	400 U	440 U	450 U
Dibutyl Phthalate	330 U	400 U	440 U	450 U
Fluoranthene	330 U	400 U	440 U	450 U
Benzidine	3,200 U	4,000 U	4,400 U	4,500 U
Pyrene	330 U	400 U	440 U	21 J
Butylbenzyl Phthalate	330 U	400 U	440 U	450 U
3,3'-Dichlorobenzidine	660 U	800 U	880 U	900 U
Benzo(a)anthracene	330 U	400 U	440 U	450 U
Bis(2-ethylhexyl) Phthalate	330 U	80 J	440 U	33 J
Chrysene	330 U	400 U	440 U	450 U
Dioctyl Phthalate	330 U	400 U	440 U	450 U
Benzo(b)fluoranthene	330 U	400 U	440 U	450 U
Benzo(k)fluoranthene	330 U	400 U	440 U	450 U
Benzo(a)pyrene	330 U	400 U	440 U	450 U
Indeno(1,2,3-cd)pyrene	330 U	400 U	440 U	450 U
Dibenzo(a,h)anthracene	330 U	400 U	440 U	450 U
Benzo(g,h,i)perylene	330 U	400 U	440 U	450 U
Units	(ug/kg)	(ug/kg dw)	(ug/kg dw)	(ug/kg dw)

VIII. Analytical Results (Cont'd)

Semivolatile Organics (Page 1 of 2)

		Sample Designation		
Constituent	Nonaqueous Method Blank	A16918-11 609A-1001-SB01	A16918-12 609A-1001 SB02	A16918-13 609A-1002-SB01
N-Nitrosodimethylamine	330 U	380 U	410 U	380 U
Phenol	330 U	380 U	62 J	1,900
Bis(2-chloroethyl) Ether	330 U	380 U	410 U	380 U
2-Chlorophenol	330 U	380 U	410 U	380 U
1,3-Dichlorobenzene	330 U	380 U	34 J	380 U
1,4-Dichlorobenzene	330 U	380 U	30 J	130 J
1,2-Dichlorobenzene	330 U	380 U	410 U	43 J
2-Methylphenol	330 U	380 U	410 U	25 J
Bis(2-chloroisopropyl) Ether	330 U	380 U	410 U	380 U
4-Methylphenol	330 U	2,800	410 U	2,000
N-Nitrosodipropylamine	330 U	380 U	410 U	380 U
Hexachloroethane	330 U	380 U	410 U	380 U
Nitrobenzene	330 U	380 U	410 U	380 U
Isophorone	330 U	380 U	410 U	380 U
2-Nitrophenol	330 U	380 U	410 U	380 U
2,4-Dimethylphenol	330 U	380 U	410 U	50 J
Bis(2-chloroethoxy)methane	330 U	380 U	410 U	380 U
2,4-Dichlorophenol	330 U	380 U	410 U	380 U
1,2,4-Trichlorobenzene	330 U	380 U	270 J	2,100
Naphthalene	330 U	830	410 U	40 J
Hexachlorobutadiene	330 U	380 U	410 U	380 U
4-Chloro-3-methylphenol	330 U	380 U	410 U	380 U
Hexachlorocyclopentadiene	330 U	380 U	410 U	380 U
2,4,6-Trichlorophenol	330 U	380 U	410 U	380 U
2-Chloronaphthalene	330 U	380 U	410 U	380 U
Dimethyl Phthalate	330 U	380 U	410 U	380 U
Acenaphthylene	330 U	380 U	410 U	380 U
Acenaphthene	330 U	380 U	410 U	380 U
2,4-Dinitrophenol	1,600 U	1,800 U	2,000 U	1,800 U
Units	(ug/kg)	(ug/kg dw)	(ug/kg dw)	(ug/kg dw)

VIII. Analytical Results (Cont'd)

Semivolatile Organics (Page 2 of 2)

Constituent	Nonaqueous Method Blank	A16918-11 609A-1001-SB0	A16918-12 609A-1001-SB02	A16918-13 609A-1002-SB01
		Sample Designation		
4-Nitrophenol	1,600 U	1,800 U	2,000 U	1,800 U
2,4-Dinitrotoluene	330 U	380 U	410 U	380 U
2,6-Dinitrotoluene	330 U	380 U	410 U	380 U
Diethyl Phthalate	330 U	380 U	410 U	380 U
4-Chlorophenyl Phenyl Ether	330 U	380 U	410 U	380 U
Fluorene	330 U	380 U	410 U	380 U
4,6-Dinitro-2-methylphenol	1,600 U	1,800 U	2,000 U	1,800 U
N-Nitrosodiphenylamine	330 U	380 U	410 U	380 U
4-Bromophenyl Phenyl Ether	330 U	380 U	410 U	380 U
Hexachlorobenzene	330 U	380 U	410 U	380 U
Pentachlorophenol	1,600 U	1,800 U	2,000 U	1,800 U
Phenanthrene	330 U	380 U	410 U	380 U
Anthracene	330 U	380 U	410 U	380 U
Dibutyl Phthalate	330 U	380 U	21 J	380 U
Fluoranthene	330 U	380 U	410 U	380 U
Benzidine	3,200 U	3,800 U	2,000 U	3,800 U
Pyrene	330 U	380 U	410 U	380 U
Butylbenzyl Phthalate	330 U	380 U	410 U	380 U
3,3'-Dichlorobenzidine	660 U	750 U	830 U	750 U
Benzo(a)anthracene	330 U	380 U	410 U	380 U
Bis(2-ethylhexyl) Phthalate	330 U	380 U	57 J	86 J
Chrysene	330 U	380 U	410 U	380 U
Dioctyl Phthalate	330 U	380 U	410 U	24 J
Benzo(b)fluoranthene	330 U	380 U	410 U	380 U
Benzo(k)fluoranthene	330 U	380 U	410 U	380 U
Benzo(a)pyrene	330 U	380 U	410 U	380 U
Indeno(1,2,3-cd)pyrene	330 U	380 U	410 U	380 U
Dibenzo(a,h)anthracene	330 U	380 U	410 U	380 U
Benzo(g,h,i)perylene	330 U	380 U	410 U	380 U
Units	(ug/kg)	(ug/kg dw)	(ug/kg dw)	(ug/kg dw)

VIII. Analytical Results (Cont'd)

Semivolatile Organics (Page 1 of 2)

		Sample Designation		
Constituent	Nonaqueous Method Blank	A16918-14 609A-1002-SB02	A16918-15 609A-0801 WB01	A16918-19 609A-0502-SB01
N-Nitrosodimethylamine	330 U	460 U	10 U	400 U
Phenol	330 U	460 U	10 U	400 U
Bis(2-chloroethyl) Ether	330 U	460 U	10 U	400 U
2-Chlorophenol	330 U	460 U	10 U	400 U
1,3-Dichlorobenzene	330 U	460 U	10 U	400 U
1,4-Dichlorobenzene	330 U	460 U	10 U	400 U
1,2-Dichlorobenzene	330 U	460 U	10 U	400 U
2-Methylphenol	330 U	460 U	10 U	400 U
Bis(2-chloroisopropyl) Ether	330 U	460 U	10 U	400 U
4-Methylphenol	330 U	83 J	10 U	400 U
N-Nitrosodipropylamine	330 U	460 U	10 U	400 U
Hexachloroethane	330 U	460 U	10 U	400 U
Nitrobenzene	330 U	460 U	10 U	400 U
Isophorone	330 U	460 U	10 U	400 U
2-Nitrophenol	330 U	460 U	10 U	400 U
2,4-Dimethylphenol	330 U	460 U	10 U	400 U
Bis(2-chloroethoxy)methane	330 U	460 U	10 U	400 U
2,4-Dichlorophenol	330 U	460 U	10 U	400 U
1,2,4-Trichlorobenzene	330 U	470	10 U	400 U
Naphthalene	330 U	460 U	10 U	400 U
Hexachlorobutadiene	330 U	460 U	10 U	400 U
4-Chloro-3-methylphenol	330 U	460 U	10 U	400 U
Hexachlorocyclopentadiene	330 U	460 U	10 U	400 U
2,4,6-Trichlorophenol	330 U	460 U	10 U	400 U
2-Chloronaphthalene	330 U	460 U	10 U	400 U
Dimethyl Phthalate	330 U	460 U	10 U	400 U
Acenaphthylene	330 U	460 U	10 U	400 U
Acenaphthene	330 U	460 U	10 U	400 U
2,4-Dinitrophenol	1,600 U	2,300 U	50 U	2,000 U
Units	(ug/kg)	(ug/kg dw)	(ug/l)	(ug/kg dw)

VIII. Analytical Results (Cont'd)

Semivolatile Organics (Page 2 of 2)

	Sample Designation			
Constituent	Nonaqueous Method Blank	A16918-14 609A-1002-SB02	A16918-15 609A-0801-WB01	A16918-19 609A-0502-SB01
4-Nitrophenol	1,600 U	2,300 U	50 U	2,000 U
2,4-Dinitrotoluene	330 U	460 U	10 U	400 U
2,6-Dinitrotoluene	330 U	460 U	10 U	400 U
Diethyl Phthalate	330 U	460 U	10 U	400 U
4-Chlorophenyl Phenyl Ether	330 U	460 U	10 U	400 U
Fluorene	330 U	460 U	10 U	400 U
4,6-Dinitro-2-methylphenol	1,600 U	2,300 U	50 U	2,000 U
N-Nitrosodiphenylamine	330 U	460 U	10 U	400 U
4-Bromophenyl Phenyl Ether	330 U	460 U	10 U	400 U
Hexachlorobenzene	330 U	460 U	10 U	400 U
Pentachlorophenol	1,600 U	2,300 U	50 U	2,000 U
Phenanthrene	330 U	460 U	10 U	400 U
Anthracene	330 U	460 U	10 U	400 U
Dibutyl Phthalate	330 U	460 U	10 U	400 U
Fluoranthene	330 U	460 U	10 U	400 U
Benzidine	3,200 U	4,600 U	100 U	4,000 U
Pyrene	330 U	460 U	10 U	400 U
Butylbenzyl Phthalate	330 U	460 U	10 U	400 U
3,3'-Dichlorobenzidine	660 U	930 U	20 U	800 U
Benzo(a)anthracene	330 U	460 U	10 U	400 U
Bis(2-ethylhexyl) Phthalate	330 U	460 U	10 U	71 J
Chrysene	330 U	460 U	10 U	400 U
Dioctyl Phthalate	330 U	460 U	10 U	400 U
Benzo(b)fluoranthene	330 U	460 U	10 U	400 U
Benzo(k)fluoranthene	330 U	460 U	10 U	400 U
Benzo(a)pyrene	330 U	460 U	10 U	400 U
Indeno(1,2,3-cd)pyrene	330 U	460 U	10 U	400 U
Dibenzo(a,h)anthracene	330 U	460 U	10 U	400 U
Benzo(g,h,i)perylene	330 U	460 U	10 U	400 U
Units	(ug/kg)	(ug/kg dw)	(ug/kg dw)	(ug/kg dw)

VIII. Analytical Results (Cont'd)

Semivolatile Organics (Page 1 of 2)

	Sample Designation		
Constituent	Nonaqueous Method Blank	A16918-22 609A-0503-SB01	A16918-24 609A-0503 WB01
N-Nitrosodimethylamine	330 U	490 U	10 U
Phenol	330 U	490 U	10 U
Bis(2-chloroethyl) Ether	330 U	490 U	10 U
2-Chlorophenol	330 U	490 U	10 U
1,3-Dichlorobenzene	330 U	490 U	10 U
1,4-Dichlorobenzene	330 U	490 U	10 U
1,2-Dichlorobenzene	330 U	490 U	10 U
2-Methylphenol	330 U	490 U	10 U
Bis(2-chloroisopropyl) Ether	330 U	490 U	10 U
4-Methylphenol	330 U	490 U	10 U
N-Nitrosodipropylamine	330 U	490 U	10 U
Hexachloroethane	330 U	490 U	10 U
Nitrobenzene	330 U	490 U	10 U
Isophorone	330 U	490 U	10 U
2-Nitrophenol	330 U	490 U	10 U
2,4-Dimethylphenol	330 U	490 U	10 U
Bis(2-chloroethoxy)methane	330 U	490 U	10 U
2,4-Dichlorophenol	330 U	490 U	10 U
1,2,4-Trichlorobenzene	330 U	490 U	10 U
Naphthalene	330 U	490 U	10 U
Hexachlorobutadiene	330 U	490 U	10 U
4-Chloro-3-methylphenol	330 U	490 U	10 U
Hexachlorocyclopentadiene	330 U	490 U	10 U
2,4,6-Trichlorophenol	330 U	490 U	10 U
2-Chloronaphthalene	330 U	490 U	10 U
Dimethyl Phthalate	330 U	490 U	10 U
Acenaphthylene	330 U	490 U	10 U
Acenaphthene	330 U	490 U	10 U
2,4-Dinitrophenol	1,600 U	2,400 U	50 U
Units	(ug/kg)	(ug/kg dw)	(ug/l)

VIII. Analytical Results (Cont'd)

Semivolatile Organics (Page 2 of 2)

Constituent	Nonaqueous Method Blank	A16918-22 609A-0503-SB01	A16918-24 609A-0503-WB01
	Sample Designation		
4-Nitrophenol	1,600 U	2,400 U	50 U
2,4-Dinitrotoluene	330 U	490 U	10 U
2,6-Dinitrotoluene	330 U	490 U	10 U
Diethyl Phthalate	330 U	490 U	10 U
4-Chlorophenyl Phenyl Ether	330 U	490 U	10 U
Fluorene	330 U	490 U	10 U
4,6-Dinitro-2-methylphenol	1,600 U	2,400 U	50 U
N-Nitrosodiphenylamine	330 U	490 U	10 U
4-Bromophenyl Phenyl Ether	330 U	490 U	10 U
Hexachlorobenzene	330 U	490 U	10 U
Pentachlorophenol	1,600 U	2,400 U	50 U
Phenanthrene	330 U	490 U	10 U
Anthracene	330 U	490 U	10 U
Dibutyl Phthalate	330 U	35 J	10 U
Fluoranthene	330 U	490 U	10 U
Benzidine	3,200 U	4,900 U	100 U
Pyrene	330 U	180 J	10 U
Butylbenzyl Phthalate	330 U	490 U	10 U
3,3'-Dichlorobenzidine	660 U	980 U	20 U
Benzo(a)anthracene	330 U	490 U	10 U
Bis(2-ethylhexyl) Phthalate	330 U	490 U	10 U
Chrysene	330 U	490 U	10 U
Dioctyl Phthalate	330 U	490 U	10 U
Benzo(b)fluoranthene	330 U	3,700	10 U
Benzo(k)fluoranthene	330 U	490 U	10 U
Benzo(a)pyrene	330 U	490 U	10 U
Indeno(1,2,3-cd)pyrene	330 U	490 U	10 U
Dibenzo(a,h)anthracene	330 U	490 U	10 U
Benzo(g,h,i)perylene	330 U	490 U	10 U
Units	(ug/kg)	(ug/kg dw)	(ug/l)

VIII. Analytical Results (Cont'd)

Polychlorinated Biphenyls

Constituent	Sample Designation Aqueous Method Blank	 A16918-6 609A-1401-SW01
Aroclor 1016	10 U	10 U
Aroclor 1221	10 U	10 U
Aroclor 1232	10 U	10 U
Aroclor 1242	10 U	10 U
Aroclor 1248	10 U	10 U
Aroclor 1254	10 U	10 U
Aroclor 1260	10 U	10 U
Units	(ug/1)	(ug/1)

VIII. Analytical Results (Cont'd)

Pesticidal Compounds and Polychlorinated Biphenyls

Constituent	Nonaqueous Method Blank	Sample Designation A16918-1 609A-0504-SB01	A16918-5 609A-1201-SB01	A16918-7 609A-0901-SB01
alpha-BHC	330 U	460 U	3,700 U	390 U
beta-BHC	330 U	460 U	3,700 U	390 U
delta-BHC	330 U	460 U	3,700 U	390 U
gamma-BHC (Lindane)	330 U	460 U	3,700 U	390 U
Heptachlor	330 U	460 U	3,700 U	390 U
Aldrin	330 U	460 U	3,700 U	390 U
Heptachlor Epoxide	330 U	460 U	3,700 U	390 U
Endosulfan I	330 U	460 U	3,700 U	390 U
Dieldrin	330 U	460 U	3,700 U	390 U
4,4'-DDE	330 U	460 U	3,700 U	390 U
Endrin	330 U	460 U	3,700 U	390 U
Endosulfan II	330 U	460 U	3,700 U	390 U
4,4'-DDD	330 U	460 U	3,700 U	390 U
Endosulfan Sulfate	330 U	460 U	3,700 U	390 U
4,4'-DDT	330 U	460 U	3,700 U	390 U
Endrin Aldehyde	330 U	460 U	3,700 U	390 U
Chlordane	330 U	460 U	3,700 U	390 U
Toxaphene	330 U	460 U	3,700 U	390 U
Aroclor 1016	330 U	460 U	3,700 U	390 U
Aroclor 1221	330 U	460 U	3,700 U	390 U
Aroclor 1232	330 U	460 U	3,700 U	390 U
Aroclor 1242	330 U	460 U	3,700 U	390 U
Aroclor 1248	330 U	460 U	3,700 U	390 U
Aroclor 1254	330 U	460 U	3,700 U	390 U
Aroclor 1260	330 U	460 U	3,700 U	390 U
Units	(ug/kg)	(ug/kg dw)	(ug/kg dw)	(ug/kg dw)

VIII. Analytical Results (Cont'd)

Pesticidal Compounds and Polychlorinated Biphenyls

		Sample Designation		
Constituent	Nonaqueous Method Blank	A16918-8 609A-0901-SB02	A16918-9 609A-0101-SB01	A16918-10 609A-0101-SB02
alpha-BHC	330 U	400 U	440 U	460 U
beta-BHC	330 U	400 U	440 U	460 U
delta-BHC	330 U	400 U	440 U	460 U
gamma-BHC (Lindane)	330 U	400 U	440 U	460 U
Heptachlor	330 U	400 U	440 U	460 U
Aldrin	330 U	400 U	440 U	460 U
Heptachlor Epoxide	330 U	400 U	440 U	460 U
Endosulfan I	330 U	400 U	440 U	460 U
Dieldrin	330 U	400 U	440 U	460 U
4,4'-DDE	330 U	400 U	440 U	460 U
Endrin	330 U	400 U	440 U	460 U
Endosulfan II	330 U	400 U	440 U	460 U
4,4'-DDD	330 U	400 U	440 U	460 U
Endosulfan Sulfate	330 U	400 U	440 U	460 U
4,4'-DDT	330 U	400 U	440 U	460 U
Endrin Aldehyde	330 U	400 U	440 U	460 U
Chlordane	330 U	400 U	440 U	460 U
Toxaphene	330 U	400 U	440 U	460 U
Aroclor 1016	330 U	400 U	440 U	460 U
Aroclor 1221	33C	400 U	440 U	460 U
Aroclor 1232	330 U	400 U	440 U	460 U
Aroclor 1242	330 U	400 U	440 U	460 U
Aroclor 1248	330 U	400 U	440 U	460 U
Aroclor 1254	330 U	400 U	440 U	460 U
Aroclor 1260	330 U	400 U	440 U	460 U
Units	(ug/kg)	(ug/kg dw)	(ug/kg dw)	(ug/kg dw)

VIII. Analytical Results (Cont'd)

Pesticidal Compounds and Polychlorinated Biphenyls

		Sample Designation		
Constituent	Nonaqueous Method Blank	A16918-11 609A-1001-SB01	A16918-12 609A-1001-SB02	A16918-13 609A-1002-SB01
alpha-BHC	330 U	38,000 U	420 U	3,800 U
beta-BHC	330 U	38,000 U	420 U	3,800 U
delta-BHC	330 U	38,000 U	420 U	3,800 U
gamma-BHC (Lindane)	330 U	38,000 U	420 U	3,800 U
Heptachlor	330 U	38,000 U	420 U	3,800 U
Aldrin	330 U	38,000 U	420 U	3,800 U
Heptachlor Epoxide	330 U	38,000 U	420 U	3,800 U
Endosulfan I	330 U	38,000 U	420 U	3,800 U
Dieldrin	330 U	38,000 U	420 U	3,800 U
4,4'-DDE	330 U	38,000 U	420 U	3,800 U
Endrin	330 U	38,000 U	420 U	3,800 U
Endosulfan II	330 U	38,000 U	420 U	3,800 U
4,4'-DDD	330 U	38,000 U	420 U	3,800 U
Endosulfan Sulfate	330 U	38,000 U	420 U	3,800 U
4,4'-DDT	330 U	38,000 U	420 U	3,800 U
Endrin Aldehyde	330 U	38,000 U	420 U	3,800 U
Chlordane	330 U	38,000 U	420 U	3,800 U
Toxaphene	330 U	38,000 U	420 U	3,800 U
Aroclor 1016	330 U	38,000 U	420 U	3,800 U
Aroclor 1221	330 U	38,000 U	420 U	3,800 U
Aroclor 1232	330 U	38,000 U	420 U	3,800 U
Aroclor 1242	330 U	79,000	660	6,600
Aroclor 1248	330 U	38,000 U	420 U	3,800 U
Aroclor 1254	330 U	38,000 U	420 U	3,800 U
Aroclor 1260	330 U	38,000 U	420 U	3,800 U
Units	(ug/kg)	(ug/kg dw)	(ug/kg dw)	(ug/kg dw)

VIII. Analytical Results (Cont'd)

Pesticidal Compounds and Polychlorinated Biphenyls

		Sample De ignation		
Constituent	Nonaqueous Method Blank	A16918-14 609A-1002-SB02	A16918-15 609A-0801-WB01	A16918-19 609A-0502-SB01
alpha-BHC	330 U	460 U	10 U	400 U
beta-BHC	330 U	460 U	10 U	400 U
delta-BHC	330 U	460 U	10 U	400 U
gamma-BHC (Lindane)	330 U	460 U	10 U	400 U
Heptachlor	330 U	460 U	10 U	400 U
Aldrin	330 U	460 U	10 U	400 U
Heptachlor Epoxide	330 U	460 U	10 U	400 U
Endosulfan I	330 U	460 U	10 U	400 U
Dieldrin	330 U	460 U	10 U	400 U
4,4'-DDE	330 U	460 U	10 U	400 U
Endrin	330 U	460 U	10 U	400 U
Endosulfan II	330 U	460 U	10 U	400 U
4,4'-DDD	330 U	460 U	10 U	400 U
Endosulfan Sulfate	330 U	460 U	10 U	400 U
4,4'-DDT	330 U	460 U	10 U	400 U
Endrin Aldehyde	330 U	460 U	10 U	400 U
Chlordane	330 U	460 U	10 U	400 U
Toxaphene	330 U	460 U	10 U	400 U
Aroclor 1016	330 U	460 U	10 U	400 U
Aroclor 1221	330 U	460 U	10 U	400 U
Aroclor 1232	330 U	460 U	10 U	400 U
Aroclor 1242	330 U	1,800	10 U	400 U
Aroclor 1248	330 U	460 U	10 U	400 U
Aroclor 1254	330 U	460 U	10 U	400 U
Aroclor 1260	330 U	460 U	10 U	400 U
Units	(ug/kg)	(ug/kg dw)	(ug/l)	(ug/kg dw)

VIII. Analytical Results (Cont'd)

Pesticidal Compounds and Polychlorinated Biphenyls

Constituent	Nonaqueous Method Blank	A16918-22 609A-0503-SB01	A16918-24 609A-0503-WB01
	Sample Designation		
alpha-BHC	330 U	500 U	10 U
beta-BHC	330 U	500 U	10 U
delta-BHC	330 U	500 U	10 U
gamma-BHC (Lindane)	330 U	500 U	10 U
Heptachlor	330 U	500 U	10 U
Aldrin	330 U	500 U	10 U
Heptachlor Epoxide	330 U	500 U	10 U
Endosulfan I	330 U	500 U	10 U
Dieldrin	330 U	500 U	10 U
4,4'-DDE	330 U	500 U	10 U
Endrin	330 U	500 U	10 U
Endosulfan II	330 U	500 U	10 U
4,4'-DDD	330 U	500 U	10 U
Endosulfan Sulfate	330 U	500 U	10 U
4,4'-DDT	330 U	500 U	10 U
Endrin Aldehyde	330 U	500 U	10 U
Chlordane	330 U	500 U	10 U
Toxaphene	330 U	500 U	10 U
Aroclor 1016	330 U	500 U	10 U
Aroclor 1221	330 U	500 U	10 U
Aroclor 1232	330 U	500 U	10 U
Aroclor 1242	330 U	240 J	10 U
Aroclor 1248	330 U	500 U	10 U
Aroclor 1254	330 U	500 U	10 U
Aroclor 1260	330 U	500 U	10 U
Units	(ug/kg)	(ug/kg dw)	(ug/l)

VIII. Analytical Results (Cont'd)

Metals

Parameter	Method Blank	Sample Designation A16918-1 609A-0504-SB01	A16918-5 609A-1201-SB01	A16918-7 609A-0901-SB01
Antimony, total	2,000 U	2,800 U	510 J	2,400 U
Arsenic, total	1,000 U	15,000	2,500	12,000
Beryllium, total	500 U	690 U	560 U	1,100
Cadmium, total	1,000 U	8,400	6,200	1,200 U
Chromium, total	5,000 U	36,000	86,000	16,000
Copper, total	5,000 U	6,900 U	160,000	14,000
Lead, total	10,000 U	10,000 U	96,000	51,000
Mercury, total	200 U	280 U	220 U	240 U
Nickel, total	4,000 U	5,600 U	47,000	4,700 U
Selenium, total	1,000 U	1,400 U	1,100 U	1,200 U
Silver, total	4,000 U	5,600 U	4,500 U	4,700 U
Thallium, total	1,000 U	1,400 U	1,100 U	1,200 U
Zinc, total	2,000 U	48,000	170,000	29,000
Units	(ug/kg)	(ug/kg dw)	(ug/kg dw)	(ug/kg dw)

Parameter	Sample Designation A16918-8 609A-0901-SB02	A16918-9 609A-0101-SB01	A16918-10 609A-0101-SB02	A16918-11 609A-1001-SB01
Antimony, total	2,400 U	2,700 U	2,700 U	2,300 U
Arsenic, total	4,000	13,000	20,000	3,800
Beryllium, total	600 U	670 U	680 U	1,200
Cadmium, total	1,200 U	10,000	13,000	1,100 U
Chromium, total	18,000	40,000	42,000	18,000
Copper, total	6,000 U	51,000	65,000	5,700 U
Lead, total	12,000 U	13,000 U	14,000 U	11,000 U
Mercury, total	240 U	270 U	270 U	230 U
Nickel, total	4,800 U	23,000	28,000	4,500 U
Selenium, total	1,200 U	1,300 U	1,300 U	1,100 U
Silver, total	4,800 U	5,300 U	5,500 U	4,500 U
Thallium, total	1,200 U	1,300 U	1,300 U	1,100 U
Zinc, total	22,000	81,000	77,000	35,000
Units	(ug/kg)	(ug/kg dw)	(ug/kg dw)	(ug/kg dw)

VIII. Analytical Results (Cont'd)

Metals

Parameter	Method Blank	A16918-12 609A-1001-SB02	A16918-13 609A-1002-SB01	A16918-14 609A-1002-SB02
		Sample Designation		
Antimony, total	2,000 U	2,500 U	2,300 U	2,800 U
Arsenic, total	1,000 U	14,000	3,600	46,000
Beryllium, total	500 U	630 U	570 U	700 U
Cadmium, total	1,000 U	11,000	6,000	26,000
Chromium, total	5,000 U	43,000	22,000	78,000
Copper, total	5,000 U	6,300 U	25,000	140,000
Lead, total	10,000 U	13,000 U	11,000 U	14,000 U
Mercury, total	200 U	250 U	230 U	280 U
Nickel, total	4,000 U	5,000 U	4,500 U	41,000
Selenium, total	1,000 U	1,200 U	1,100 U	1,400 U
Silver, total	4,000 U	5,000 U	4,500 U	5,600 U
Thallium, total	1,000 U	1,200 U	1,100 U	1,400 U
Zinc, total	2,000 U	62,000	38,000	120,000
Units	(ug/kg)	(ug/kg dw)	(ug/kg dw)	(ug/kg dw)

Parameter	A16918-15 609A-0801-WB01	A16918-19 609A-0502-SB01	A16918-22 609A-0503-SB01	A16918-24 609A-0503-WB01
		Sample Designation		
Antimony, total	60 U	2,400	3,000 U	60 U
Arsenic, total	2.7 J	18,000	44,000	10 U
Beryllium, total	5.0 U	610 U	750 U	5.0 U
Cadmium, total	10 U	17,000	12,000	10 U
Chromium, total	50 U	52,000	38,000	50 U
Copper, total	50 U	95,000	63,000	50 U
Lead, total	50 U	12,000 U	15,000 U	50 U
Mercury, total	2.0 U	240 U	300 U	2.0 U
Nickel, total	40 U	24,000	6,000 U	40
Selenium, total	10 U	1,200 U	1,500 U	10 U
Silver, total	50 U	4,900 U	6,000 U	50 U
Thallium, total	10 U	1,200 U	1,500 U	10 U
Zinc, total	75	67,000	62,000	180
Units	(ug/l)	(ug/kg dw)	(ug/kg dw)	(ug/l)

II. Analytical Results (Cont'd)

General Chemistry

Sample Designation		Cyanide, total	Phenolics, total as phenol
		Parameter	
Method Blank		250 U	250 U
A16918-1	609A-0504-SB01	3,200	350 U
A16918-5	609A-1201-SB01	280 U	420
A16918-7	609A-0901-SB01	290 U	290 U
A16918-8	609A-0901-SB02	300 U	300 U
A16918-9	609A-0101-SB01	330 U	330 U
A16918-10	609A-0101-SB02	340 U	340 U
A16918-11	609A-1001-SB01	390	45,000
A16918-12	609A-1001-SB02	2,200	1,300
A16918-13	609A-1002-SB01	280 U	59,000
A16918-14	609A-1002-SB02	520	350 U
A16918-15	609A-0801-WB01	25 U*	NR
A16918-19	609A-0502-SB01	2,900	300 U
A16918-22	609A-0503-SB01	370 U	550
A16918-24	609A-0503-WB01	25 U*	NR
Units		(ug/kg dw)	(ug/kg dw)

* (ug/l)

III. Analytical Results (Cont'd)

General Chemistry

Sample Designation		Petroleum Hydrocarbons by IR	Residue, total
		Parameter	
Method Blank		20,000 U	0.1 U
A16918-1	609A-0504-SB01	330,000	72
A16918-2	609A-0504-SB02	29,000 U	70
A16918-3	609A-0504-SB03	27,000 U	74
A16918-4	609A-0504-SB22	28,000 U	71
A16918-5	609A-1201-SB01	3,400,000	89
A16918-7	609A-0901-SB01	NR	85
A16918-8	609A-0901-SB02	NR	83
A16918-9	609A-0101-SB01	720,000	75
A16918-10	609A-0101-SB02	380,000	73
A16918-11	609A-1001-SB01	4,500,000	88
A16918-12	609A-1001-SB02	25,000 U	80
A16918-13	609A-1002-SB01	2,700,000	88
A16918-14	609A-1002-SB02	28,000 U	71
A16918-15	609A-0801-WB01	2,000 U	NR
A16918-16	609A-0501-SB01	22,000 U	89
A16918-17	609A-0501-SB02	28,000 U	71
A16918-18	609A-0501-SB03	29,000	69
A16918-19	609A-0502-SB01	240,000	82
A16918-20	609A-0502-SB02	47,000 U	43
A16918-21	609A-0502-SB03	30,000 U	67
A16918-22	609A-0503-SB01	30,000 U	67
A16918-23	609A-0503-SB02	25,000 U	80
A16918-24	609A-0503-WB01	1,000 U*	NR
Units		(ug/kg dw)	(%)

* (ug/l)

II. Analytical Results (Cont'd)

General Chemistry

Sample Designation		Benzene	Toluene	Ethylbenzene
		Parameter		
Method Blank		330 J	330 U	330 U
A16918-1	609A-0504-SB01	6 J	6 J	460 U
A16918-2	609A-0504-SB02	470 U	13 J	470 U
A16918-3	609A-0504-SB03	450 U	9 J	450 U
A16918-4	609A-0504-SB22	460 U	21 J	460 U
A16918-16	609A-0501-SB01	370 U	370 U	370 U
A16918-17	609A-0501-SB02	460 U	460 U	460 U
A16918-18	609A-0501-SB03	480 U	480 U	480 U
A16918-19	609A-0502-SB01	400 U	400 U	400 U
A16918-20	609A-0502-SB02	770 U	770 U	770 U
A16918-21	609A-0502-SB03	490 U	490 U	490 U
A16918-22	609A-0503-SB01	490 U	490 U	490 U
A16918-23	609A-0503-SB02	410 U	14 J	410 U
Units		(ug/kg dw)	(ug/kg dw)	(ug/kg dw)

III. Analytical Results (Cont'd)

General Chemistry

Sample Designation		m-Xylene	p-Xylene	o-Xylene
		Parameter		
Method Blank		330 U	330 U	330 U
A16918-1	609A-0504-SB01	460 U	460 U	460 U
A16918-2	609A-0504-SB02	470	470 U	470 U
A16918-3	609A-0504-SB03	450 U	450 U	450 U
A16918-4	609A-0504-SB22	460 U	460 U	460 U
A16918-16	609A-0501-SB01	370 U	370 U	370 U
A16918-17	609A-0501-SB02	460 U	460 U	460 U
A16918-18	609A-0501-SB03	480 U	480 U	480 U
A16918-19	609A-0502-SB01	400 U	400 U	400 U
A16918-20	609A-0502-SB02	770 U	770 U	770 U
A16918-21	609A-0502-SB03	490 U	490 U	490 U
A16918-22	609A-0503-SB01	490 U	490 U	490 U
A16918-23	609A-0503-SB02	410 U	410 U	410 U
Units		(ug/kg dw)	(ug/kg dw)	(ug/kg dw)

VIII. Analytical Results (Cont'd)

EPA/NIH/NBS Nontargetted Library Search

No nontargetted compounds were detected in the following samples:

Volatile Aqueous Method Blank
Volatile Nonaqueous Method Blank 1, 2, 3
Semivolatile Aqueous Method Blank
Semivolatile Nonaqueous Method Blank
A16918-15 609A-0801-WB01
A16918-24 0503-0801-WB01

AnalytiKEM Designation A16918-1
Client Designation 609A-0504-SB01

CAS Number	Compound Name	Fraction	Scan Number	Estimated Concentration (ug/kg dw)
	Unknown Compound	BNA	311	580
	Unknown Compound	BNA	372	340
	Unknown Compound	BNA	412	230
	Unknown Compound	BNA	436	1,200
	Unknown Compound	BNA	529	2,600
	Unknown Compound	BNA	632	410
	Unknown Compound	BNA	1,508	180
	Unknown Compound	BNA	1,680	840

Note: Estimated concentration is calculated against the nearest eluting internal standard.

VIII. Analytical Results (Cont'd)

EPA/NIH/NBS Nontargetted Library Search

AnalytiKEM Designation A16918-1 (Cont'd)

Client Designation 609A-0504-SB01

CAS Number	Compound Name	Fraction	Scan Number	Estimated Concentration (ug/kg dw)
	Unknown Polynuclear Aromatic Hydrocarbon	BNA	1,820	940
	Unknown Compound	BNA	1,837	260
	Unknown Polynuclear Aromatic Hydrocarbon	BNA	1,865	760
	Unknown Aliphatic	BNA	1,935	280
	Unknown Aliphatic	BNA	1,946	260
	Unknown Aliphatic	BNA	1,951	300
	Unknown Aliphatic	BNA	2,007	290
	Unknown Aliphatic	BNA	2,023	280
	Unknown Aliphatic	BNA	2,074	360
	Unknown Aliphatic	BNA	2,156	270
	Unknown Aliphatic	BNA	2,233	560
	Unknown Aliphatic	BNA	2,242	580
	Unknown Aliphatic	BNA	2,249	670
	Unknown Aliphatic	BNA	2,257	630
	Unknown Aliphatic	BNA	2,273	650
	Unknown Aliphatic	BNA	2,333	570
	Unknown Aliphatic	BNA	2,341	540

Note: Estimated concentration is calculated against the nearest eluting internal standard.

VIII. Analytical Results (Cont'd)

EPA/NIH/NBS Nontargetted Library Search

AnalytiKEM Designation A16918-5

Client Designation 609A-1201-SB01

CAS Number	Compound Name	Fraction	Scan Number	Estimated Concentration (ug/kg dw)
	None Detected	VOA	--	--
	Methylanthracene Isomer	BNA	1,619	11,000
	Unknown Polynuclear Aromatic	BNA	1,638	17,000
	Unknown Polynuclear Aromatic	BNA	1,828	7,600
	Methylpyrene Isomer	BNA	1,874	26,000
	Methylpyrene Isomer	BNA	1,887	12,000
	Methylpyrene Isomer	BNA	1,894	9,700
	Unknown Polynuclear Aromatic	BNA	2,001	9,400
	Unknown Polynuclear Aromatic	BNA	2,009	8,100
	Unknown Polynuclear Aromatic	BNA	2,021	6,900
	Unknown Polynuclear Aromatic	BNA	2,365	55,000
	Unknown Polynuclear Aromatic	BNA	2,403	10,000
	Unknown Polynuclear Aromatic	BNA	2,469	35,000
	Unknown Polynuclear Aromatic	BNA	2,489	41,000
	Unknown Polynuclear Aromatic	BNA	3,076	14,000

Note: Estimated concentration is calculated against the nearest eluting internal standard.

VIII. Analytical Results (Cont'd)

EPA/NIH/NBS Nontargetted Library Search

AnalytiKEM Designation A16918-6

Client Designation 609A-1401-SW01

CAS Number	Compound Name	Fraction	Scan Number	Estimated Concentration (ug/l)
	Unknown Compound	BNA	293	5.2
	Unknown Compound	BNA	308	10
	Unknown Compound	BNA	320	21
	Unknown Compound	BNA	365	23

AnalytiKEM Designation A16918-7

Client Designation 609A-0901-SB01

CAS Number	Compound Name	Fraction	Scan Number	Estimated Concentration (ug/kg dw)
	None Detected	VOA	--	--
	Unknown Compound	BNA	325	4,000
	Unknown Compound	BNA	369	3,900
	Unknown Compound	BNA	400	310
79-34-5	1,1,2,2-Tetrachloroethane	BNA	493	160
	Unknown Compound	BNA	2,354	290

Note: Estimated concentration is calculated against the nearest eluting internal standard.

VIII. Analytical Results (Cont'd)

EPA/NIH/NBS Nontargetted Library Search

AnalytiKEM Designation A16918-8

Client Designation 609A-0901-SB02

CAS Number	Compound Name	Fraction	Scan Number	Estimated Concentration (ug/kg dw)
	None Detected	VOA	--	--
	Unknown Compound	BNA	289	210
	Unknown Compound	BNA	436	300
	Unknown Compound	BNA	448	190
	Unknown Compound	BNA	684	800
	Unknown Compound	BNA	1,550	360
	Unknown Compound	BNA	2,153	190

AnalytiKEM Designation A16918-9

Client Designation 609A-0101-SB01

CAS Number	Compound Name	Fraction	Scan Number	Estimated Concentration (ug/kg dw)
	None Detected	VOA	--	--
	Unknown Compound	BNA	257	5,900

Note: Estimated concentration is calculated against the nearest eluting internal standard.

VIII. Analytical Results (Cont'd)

EPA/NIH/NBS Nontargetted Library Search

AnalytiKEM Designation A16918-10

Client Designation 609A-0101-SB02

CAS Number	Compound Name	Fraction	Scan Number	Estimated Concentration (ug/kg dw)
	None Detected	VOA	--	--
	Unknown Compound	BNA	238	17,000
	Unknown Alkane	BNA	246	330
	Unknown Compound	BNA	263	250
	Unknown Compound	BNA	275	640
	Unknown Compound	BNA	290	860
	Unknown Compound	BNA	316	180
	Unknown Alkene	BNA	335	740
	Unknown Compound	BNA	2,112	260
	Unknown Compound	BNA	2,116	250
	Unknown Compound	BNA	2,120	240
	Unknown Compound	BNA	2,128	240
	Unknown Compound	BNA	2,138	270
	Unknown Compound	BNA	2,724	210
	Unknown Compound	BNA	2,728	210
	Unknown Compound	BNA	2,730	210

Note: Estimated concentration is calculated against the nearest eluting internal standard.

VIII. Analytical Results (Cont'd)

EPA/NIH/NBS Nontargetted Library Search

AnalytiKEM Designation A16918-11

Client Designation 609A-1001-SB01

CAS Number	Compound Name	Fraction	Scan Number	Estimated Concentration (ug/kg dw)
	None Detected	VOA	--	--
	Trichlorobenzene Isomer	BNA	866	10,000
	Unknown Hydrocarbon	BNA	1,533	13,000
	Unknown Hydrocarbon	BNA	1,613	17,000
	Unknown Hydrocarbon	BNA	1,691	16,000
	Unknown Hydrocarbon	BNA	1,765	14,000
	Unknown Hydrocarbon	BNA	1,792	11,000
	Unknown Compound	BNA	1,817	8,500
	Unknown Hydrocarbon	BNA	1,861	8,800
	Unknown Compound	BNA	1,922	8,700
	Unknown Compound	BNA	1,931	22,000
	Unknown Hydrocarbon	BNA	1,972	9,600

Note: Estimated concentration is calculated against the nearest eluting internal standard.

VIII. Analytical Results (Cont'd)

EPA/NIH/NBS Nontargetted Library Search

AnalytiKEM Designation A16918-11 (Cont'd)

Client Designation 609A-1001-SB01

CAS Number	Compound Name	Fraction	Scan Number	Estimated Concentration (ug/kg dw)
	Unknown Compound	BNA	1,988	16,000
	Unknown Compound	BNA	2,038	16,000
	Unknown Compound	BNA	2,056	16,000
	Unknown Compound	BNA	2,073	8,400
	Unknown Compound	BNA	2,127	11,000
	Unknown Compound	BNA	2,142	17,000
	Unknown Compound	BNA	2,208	17,000
	Unknown Phthalate	BNA	2,240	17,000
	Unknown Hydrocarbon	BNA	2,302	17,000
	Unknown Compound	BNA	2,309	15,000
	Unknown Phthalate	BNA	2,319	22,000
	Unknown Compound	BNA	2,327	28,000
	Unknown Phthalate	BNA	2,578	18,000
	Unknown Compound	BNA	3,096	25,000

Note: Estimated concentration is calculated against the nearest eluting internal standard.

VIII. Analytical Results (Cont'd)

EPA/NIH/NBS Nontargetted Library Search

AnalytiKEM Designation A16918-12

Client Designation 609A-1001-SB02

CAS Number	Compound Name	Fraction	Scan Number	Estimated Concentration (ug/kg dw)
	None Detected	VOA	--	--
	Hexanedioic Acid Ester	BNA	1,965	250
	Unknown Compound	BNA	1,991	180
	Unknown Compound	BNA	2,062	1,100
	Unknown Phthalate	BNA	2,250	220

AnalytiKEM Designation A16918-13

Client Designation 609A-1002-SB01

CAS Number	Compound Name	Fraction	Scan Number	Estimated Concentration (ug/kg dw)
	None Detected	VOA	--	--
	Trichlorobenzene Isomer	BNA	866	610
	Tetrachlorobenzene Isomer	BNA	1,062	360
	Unknown Compound	BNA	1,316	1,500
	Dichlorobiphenyl Isomer	BNA	1,385	290
	Unknown Compound	BNA	1,533	290
	.richlorobiphenyl Isomer	BNA	1,538	350

Note: Estimated concentration is calculated against the nearest eluting internal standard.

VIII. Analytical Results (Cont'd)

EPA/NIH/NBS Nontargetted Library Search

AnalytiKEM Designation A16918-13 (Cont'd)

Client Designation 609A-1002-SB01

CAS Number	Compound Name	Fraction	Scan Number	Estimated Concentration (ug/kg dw)
	Unknown Compound	BNA	1,614	460
	Unknown Compound	BNA	1,691	490
	Unknown Compound	BNA	1,764	310
	Unknown Compound	BNA	1,927	450
	Unknown Compound	BNA	1,970	520
	Unknown Compound	BNA	2,006	2,300
	Unknown Compound	BNA	2,037	670
	Unknown Compound	BNA	2,054	890
	Unknown Compound	BNA	2,071	690
	Unknown Compound	BNA	2,125	510
	Unknown Compound	BNA	2,150	450
	Unknown Compound	BNA	2,208	830
	Unknown Compound	BNA	2,249	710
	Unknown Compound	BNA	2,267	700
	Unknown Compound	BNA	2,288	780
	Unknown Compound	BNA	2,298	790
	Unknown Compound	BNA	2,305	860
	Unknown Compound	BNA	2,349	680
	Unknown Compound	BNA	2,415	650

Note: Estimated concentration is calculated against the nearest eluting internal standard.

VIII. Analytical Results (Cont'd)

EPA/NIH/NBS Nontargetted Library Search

AnalytiKEM Designation A16918-14

Client Designation 609A-1002-SB02

CAS Number	Compound Name	Fraction	Scan Number	Estimated Concentration (ug/kg dw)
	Dichlorobenzene Isomer (carryover)	VOA	759	830
	Unknown Compound	BNA	1,989	200

Note: Estimated concentration is calculated against the nearest eluting internal standard.

VIII. Analytical Results (Cont'd)

EPA/NIH/NBS Nontargetted Library Search

AnalytiKEM Designation A16918-19

Client Designation 609A-0502-SB01

CAS Number	Compound Name	Fraction	Scan Number	Estimated Concentration (ug/kg dw)
	Unknown Compound	BNA	1,582	330
	Unknown Compound	BNA	2,186	170
	Unknown Compound	BNA	2,211	320
	Unknown Compound	BNA	2,218	300
	Unknown Compound	BNA	2,227	440
	Unknown Hydrocarbon	BNA	2,235	360
	Unknown Compound	BNA	2,254	250
	Unknown Compound	BNA	2,263	310
	Unknown Compound	BNA	2,273	240
	Unknown Compound	BNA	2,281	430
	Unknown Compound	BNA	2,290	380

Note: Estimated concentration is calculated against the nearest eluting internal standard.

VIII. Analytical Results (Cont'd)

EPA/NIH/NBS Nontargetted Library Search

AnalytiKEM Designation A16918-19 (Cont'd)

Client Designation 609A-0502-SB01

CAS Number	Compound Name	Fraction	Scan Number	Estimated Concentration (ug/kg dw)
	Unknown Compound	BNA	2,298	280
	Unknown Compound	BNA	2,307	360
	Unknown Compound	BNA	2,316	300
	Unknown Compound	BNA	2,324	390
	Unknown Compound	BNA	2,351	340
	Unknown Compound	BNA	2,359	240
	Unknown Compound	BNA	2,378	290
	Unknown Compound	BNA	2,404	260
	Unknown Compound	BNA	2,448	230
	Unknown Compound	BNA	2,455	230
	Unknown Compound	BNA	2,542	540
	Unknown Compound	BNA	2,602	210
	Unknown Compound	BNA	2,672	396
	Unknown Compound	BNA	2,681	230

Note: Estimated concentration is calculated against the nearest eluting internal standard.

VIII. Analytical Results (Cont'd)

EPA/NIH/NBS Nontargetted Library Search

AnalytiKEM Designation A16918-22

Client Designation 609A-0503-SB01

CAS Number	Compound Name	Fraction	Scan Number	Estimated Concentration (ug/kg dw)
	Unknown Compound	BNA	430	190
79-34-5	1,1,2,2-Tetrachloroethane	BNA	435	200
	Unknown Compound	BNA	441	230
	Hexanedioic Acid Ester	BNA	1,203	270
	Unknown Compound	BNA	1,555	300
	Unknown Compound	BNA	1,666	270
	Unknown Polynuclear Aromatic Hydrocarbon	BNA	1,671	200
	Unknown Compound	BNA	2,217	240
	Unknown Compound	BNA	2,225	310
	Unknown Compound	BNA	2,233	420
	Unknown Compound	BNA	2,243	230
	Unknown Compound	BNA	2,252	300
	Unknown Compound	BNA	2,272	250
	Unknown Compound	BNA	2,281	290
	Unknown Compound	BNA	2,289	330

Note: Estimated concentration is calculated against the nearest eluting internal standard.

VIII. Analytical Results (Cont'd)

EPA/NIH/NBS Nontargetted Library Search

AnalytiKEM Designation A16918-22 (Cont'd)

Client Designation 609A-0503-SB01

CAS Number	Compound Name	Fraction	Scan Number	Estimated Concentration (ug/kg dw)
	Unknown Compound	BNA	2,298	290
	Unknown Compound	BNA	2,307	300
	Unknown Compound	BNA	2,316	290
	Unknown Compound	BNA	2,325	320
	Unknown Compound	BNA	2,334	210
	Unknown Compound	BNA	2,343	250
	Unknown Compound	BNA	2,353	190
	Unknown Compound	BNA	2,361	280
	Unknown Compound	BNA	2,369	220
	Unknown Compound	BNA	2,379	250

Note: Estimated concentration is calculated against the nearest eluting internal standard.

ATTACHMENT 4

[redacted]
Environmental Consulting & Engineering

ASBESTOS BULK ANALYSIS DATA

CLIENT: Environ

SAMPLING DATE: 7/2/87

PROJECT NO: 1914-1

FACILITY: Polychrome, Yardville, New Jersey

COLLECTED BY: A. Carino

SAMPLE #	LOCATION	MATERIAL SAMPLED	ASBESTOS (%/TYPE)	OTHER FIBROUS MATERIALS (%)	NON-FIBROUS MATERIALS (%)
609A1301-1N01	Boiler Room, Warehouse, Above Boiler	Insulation, 1" Hot Water Line	55% Chrysotile	20% Cellulose	25% Unspecified
609A1302-1N01	Boiler Room, Warehouse, At Boiler Level, Discharge	Packing Around Elbow Boiler Discharge	40% Chrysotile	10% Cellulose 3-5% Mineral Wool	45% Binder

POLARIZED LIGHT MICROSCOPY WITH DISPERSION STAINING
EPA QUALITY ASSURANCE PROGRAM NO. 2187

James J. Weitzman
James J. Weitzman, Lab Director

kja

Headquarters: P. O. Box 165, Haddonfield, NJ 08033 (609) 547-6500
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R[redacted] P[redacted] Str[redacted] uite [redacted] 0, Ba[redacted] , M[redacted] 109[redacted] 7) 7[redacted] 206

Addendum To

Presentation of the Phase I Sampling Plan Results for the Former Polychrome Corporation Facility in Yardville, New Jersey

ECRA Case No. 86122

Submitted to the
New Jersey Department of Environmental Protection
on behalf of
Polychrome Corporation

January 1989

Prepared by:

ENVIRON Corporation
210 Carnegie Center
Suite 201
Princeton, New Jersey 08540

ENVIRON completed the Phase I sampling program at the above-referenced facility on November 18, 1988. Areas of environmental concern (AECs) 6, 7, 15 and 16, located in the wooded portion of the site, could not be located during the August 1988 drilling program. Thus, sampling in these AECs was postponed until the vegetation had thinned, enabling ENVIRON to locate the features requiring sampling. This addendum discusses this sampling, the geologic and analytical results obtained, and conclusions that can be reached regarding this portion of the site.

Soil samples from these four AECs were collected from hand auger borings. Figure 1 shows the approximate locations of these borings while Table 1 summarizes the sampling intervals and the analyses that were performed on each sample. As originally proposed, all soil samples were analyzed for Priority Pollutants plus a nontargeted 40-compound library search (PP+40). Each boring was sampled at a depth of 0.5-1.0 feet, the depth immediately below the layer of surface vegetation. Samples were not obtained from the surface because vegetative matter causes interferences with EPA Method 418.1. The uppermost soil sample for volatile organic compound (VOC) analysis was collected from a depth of 1.5-2.0 feet. At AECs 6 and 7, a third soil sample was obtained at 3.5-4.0 feet and 2.5-3.0 feet, respectively. The depth of these soil samples were different because of different geological conditions at the two locations. The water table was not encountered at any of the sampling locations.

The geology in AECs 6 and 7 was similar both laterally and vertically. The upper six inches to one foot consists of an orange-brown

Table 1: Actual Sampling Locations and Depths

AEC	Sampling Location	Number and Type of Samples per Location	Analyses
6	601	3 Soil Samples	
		• 0.5 - 1.0 feet	PP+40, (no VOCs)
		• 1.5 - 2.0 feet	VOC+15, TPHCs
		• 3.5 - 4.0 feet	PP+40, TPHCs
7	701, 702	3 Soil Samples	
		• 0.5 - 1.0 feet	PP+40 (no VOCs)
		• 1.5 - 2.0 feet	VOC+15, TPHC
		• 2.5 - 3.0 feet	PP+40, TPHC
15	1501	2 Soil Samples	
		• 0.5 - 1.0 feet	PP+40 (no VOCs), TPHC
		• 1.5 - 2.0 feet	VOC+15
16	1601	2 Soil Samples	
		• 0.5 - 1.0 feet	PP+40 (no VOCs), TPHC
		• 1.5 - 2.0 feet	VOC+15

clayey sand with vegetative matter at the surface. The borings installed in AECs 15 and 16, the small pits, also encountered these materials. Beneath the clayey sand is fine orange sand with minor clay and silt. At the base of the borings is a brown fine sand with subrounded to rounded quartz pebbles. The hand auger met with refusal in this material. Based on the relative consistency in the geology encountered, it appears that the area has not been disturbed or used for fill activities.

Petroleum hydrocarbons (TPHCs), VOCs, pesticides, polychlorinated biphenyls (PCBs), acid extractable compounds (AEs), cyanide and phenolics were not detected in any soil sample. The laboratory data package is provided as two volumes with this addendum. Several targeted base/neutral extractable compounds (BNs) were detected in certain soil samples but at concentrations below the respective method detection limits. Two of these compounds--dibutyl phthalate and bis(2-ethylhexyl)phthalate--most likely result from sample handling with latex gloves. The other BNs detected below method detection limits include naphthalene, fluroanthene, and n-nitrosodiphenylamine. Of the thirteen Priority Pollutant metals, only cadmium was identified at concentrations exceeding the ECRA guidance level of 3 ppm. The concentration of cadmium for each soil sample is provided in Table 2 and is shown on Figure 1. Concentrations of cadmium in AECs 6 and 7, where two samples were obtained from each boring, uniformly decrease with depth.

Cadmium was previously identified above the ECRA action level in AECs 1, 5, 10 and 12. ENVIRON concluded that since TPHC contamination was also present in these AECs, the cadmium contamination most likely resulted from waste oil handling practices of Monsanto Chemical Company ("Monsanto"), a former site operator. However, the absence of TPHCs in

Table 2: Concentrations of Cadmium in Soil Samples

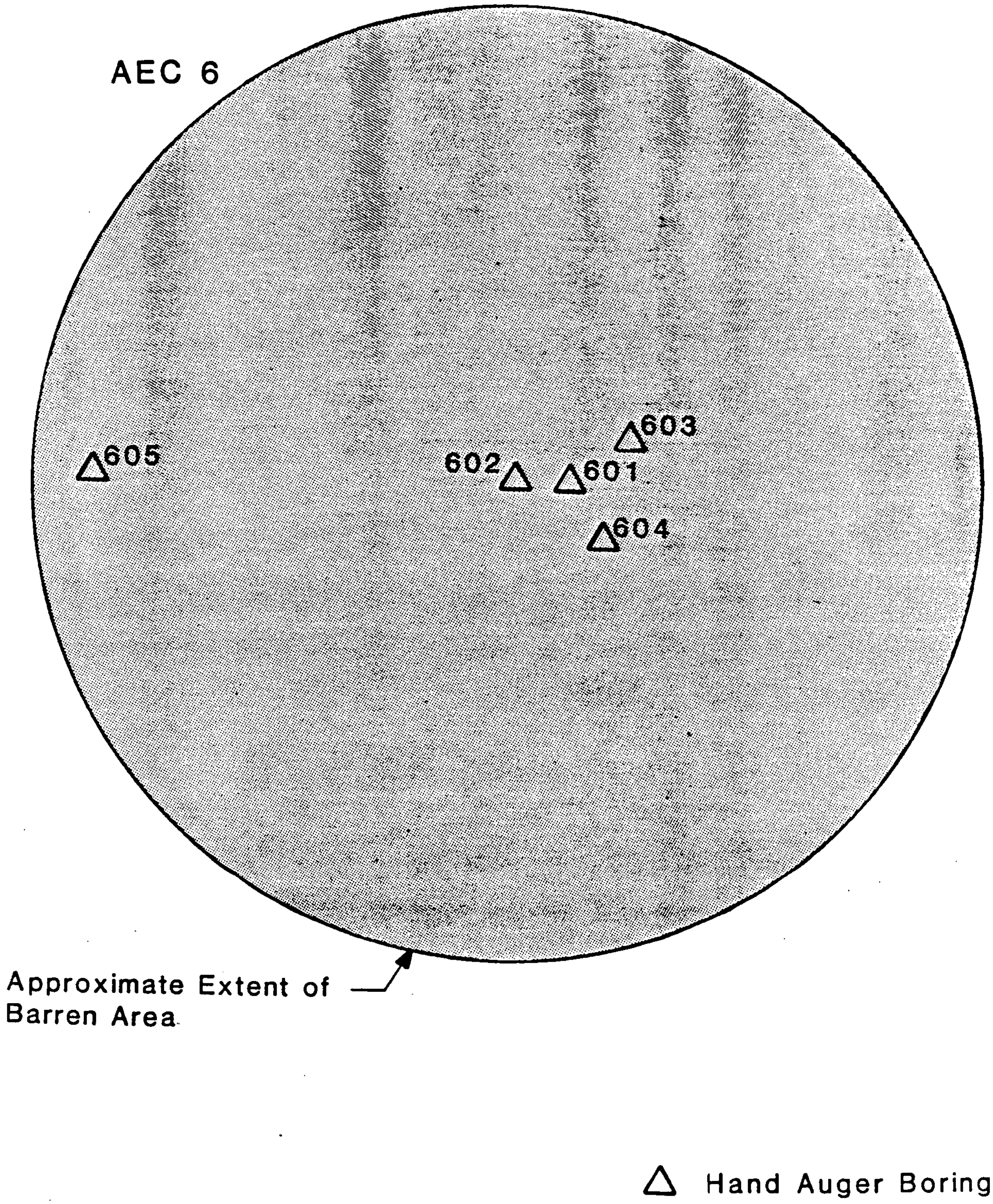
Boring Number	Depth[1]	Cadmium Concentration[2]	ECRA Guidance Level
601	0.5	58	3.0
	3.5	6.0	3.0
701	0.5	8.2	3.0
	2.5	7.3	3.0
702	0.5	7.2	3.0
	2.5	6.2	3.0
1501	0.5	9.5[3]	3.0
1601	0.5	10	3.0

1 Upper depth of sampling interval, 1.5 foot interval analyzed for VOCs only
2 In parts per million
3 Duplicate analysis-average of 9.4 and 9.6 ppm

the soil samples from AECs 6, 7, 15 and 16 and the similarity in concentrations in AECs 1, 5, 10, and 12 suggests that the cadmium concentrations may be due to conditions which predate the development of this property for industrial purposes.

Polychrome Corporation did not handle or store any products at this facility that contained cadmium. Material Safety Data Sheets for Polychrome products handled and stored at this facility were provided in the February 1986 Site Evaluation Submission. Although Polychrome's information regarding Monsanto's activities at this site is limited, current knowledge regarding former operations at this facility does not enable ENVIRON to relate the elevated cadmium level in AEC 6, and the slightly elevated cadmium levels in AECs 7, 15, and 16 to industrial activities. Excluding the concentration of 58 ppm, the cadmium concentrations appear to be approximately equal throughout the wooded portion of the site, suggesting that these levels may represent background conditions. If these levels were due to industrial activities, a greater variation in concentrations would be expected.

ENVIRON proposes to confirm and delineate the surficial cadmium contamination at boring 601 before evaluating the need for soil remediation. A confirmatory surface sample will be collected proximate to boring 601. In addition, four hand auger borings, shown on Figure 2, will be installed in AEC 6. Three of these borings will be installed proximate to boring 601 while the fourth will be located near the edge of the barren area to determine whether surface cadmium levels similar to those at boring 601 are present throughout this area. Soil samples will be collected from each boring from the surface and from a depth of approximately four feet. These samples will be analyzed for cadmium.



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PROPOSED SAMPLING LOCATIONS IN AEC 6

Figure 2

ENVIRON does not believe that it is appropriate to collect additional samples to delineate the extent of the slightly elevated cadmium levels in AECs 7, 15, and 16. Cadmium concentrations for the surface samples from these AECs are similar, suggesting that the slightly elevated cadmium conditions are areally extensive in this portion of the site. Also, cadmium concentrations in the subsurface samples are similar to the surface values, suggesting that the slightly elevated concentrations may be due to conditions which predated the development of this property for industrial purposes.

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REFERENCE NO. 14

PRESENTATION OF THE PHASE II SAMPLING PLAN RESULTS FOR THE FORMER POLYCHROME CORPORATION FACILITY IN YARDVILLE, NEW JERSEY

ECRA Case No. 86122

Volume I of II

Submitted to the
New Jersey Department of Environmental Protection
on behalf of
Polychrome Corporation

March 1990

Prepared by:

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Polychrome Corporation, Yardville, NJ

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I. INTRODUCTION

A. History of ECRA Compliance

Polychrome Corporation ("Polychrome") entered into an Agreement of Sale with Herbert Krumsick on December 18, 1985 and shortly thereafter signed an Administrative Consent Order (ACO) that governs potential cleanup of its Yardville facility ("the site") under the Environmental Cleanup Responsibility Act (ECRA). Subsequently, Mr. Krumsick sold the facility to the Hillman Group.

Polychrome submitted a General Information Submission (GIS) and a Site Evaluation Submission (SES) to the New Jersey Department of Environmental Protection (NJDEP) on February 18, 1986. A review of Polychrome's activities at this facility indicated that it was unnecessary to submit a sampling plan. Following their review of the SES, however, NJDEP required documentation of the integrity of the underground fuel oil storage tank. The subsequent Petro-Tite® test revealed the tank had a net volume change exceeding .05 gallons in an hour. A monitoring well was installed in the presumed downgradient direction proximate to the tank, which is situated partially below the water table. Soil samples were collected during the well installation, and a ground water sample was obtained after the well had been developed and had stabilized. In a May 5, 1986 letter to Edward Hogan, Esq. of Lowenstein, Sandler, et al. (counsel for Polychrome) NJDEP requested that a Sampling Plan be submitted to address potential contamination resulting from the underground tank. After subsequent discussions with NJDEP personnel regarding additional sampling requirements, a Sampling Plan was submitted on July 15, 1986. The results from the soil and ground water sampling at the underground tank were submitted as an addendum on September 26, 1986.

The NJDEP-assigned Case Manager, Michael Metlitz, requested a site inspection of the building interior, which occurred on February 3, 1987. The remainder of the property was inspected on March 3, 1987. The March 27, 1987 Report of Inspection from the NJDEP, which indicated a number of required actions, was followed by a June 10, 1987 letter to Carol Surgens, Esq., also of Lowenstein, Sandler et al., commenting on the July 15, 1986 Sampling Plan and restating the requirements in the Report of Inspection.

A Revised Sampling Plan, which was designed to determine the nature and extent of soil contamination[1] as requested in the Report of Inspection, was submitted on July 20, 1987, with an accompanying cover letter addressing issues raised by NJDEP correspondence of March 27 and June 10. The Revised Sampling Plan identified 14 areas of environmental concern (AECs) based on site history, results of the site inspections, and NJDEP comments. The locations of the AECs, which are briefly described in Table 2, are shown on Plate 1. Detailed descriptions of the

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1 For this report, "contamination" is defined as concentrations of a particular substance exceeding informal NJDEP-established ECRA cleanup guidelines for soil or ground water (Table 1). ENVIRON is using these guidelines to simplify presentation and interpretation of sampling results and neither ENVIRON nor Polychrome suggests the cleanup guidelines are the appropriate basis for a site cleanup.

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Table 1: NJDEP Informal ECRA Action Levels for Soil and Ground Water

Parameter	Soil	Ground Water
Total Petroleum Hydrocarbons (TPHCs)	100 ppm	1,000 ppb
Priority Pollutants:		
Acid Extractable Organics (AEs)	Case-by-case	50 ppb
Base/Neutral Extractable Organics (BNs)	10 ppm	Case-by-case
Pesticides	Case-by-case	Case-by-case
Polychlorinated Biphenyls (PCBs)	1-5 ppm	0.001 ppb
Volatile Organics (VOCs)	1 ppm	Case-by-case
Phenols	Case-by-case	3,500 ppb
Cyanide (CN)	12 ppm	200 ppb
Priority Pollutant Metals (PPMs)		
Antimony (Sb)	10 ppm	NA
Arsenic (As)	20 ppm	50 ppb
Beryllium (Be)	1 ppm	NA
Cadmium (Cd)	3 ppm	10 ppb
Chromium (Cr)	100 ppm	50 ppb
Copper (Cu)	170 ppm	1,000 ppb
Lead (Pb)	250-1,000 ppm	50 ppb
Mercury (Hg)	1 ppm	2 ppb
Nickel (Ni)	100 ppm	NA
Selenium (Se)	4 ppm	10 ppb
Silver (Ag)	5 ppm	50 ppb
Thallium (Tl)	5 ppm	NA
Zinc (Zn)	350 ppm	5,000 ppb
Polycyclic Aromatic Hydrocarbons (PAHs)	10 ppm	50 ppb
Dioxins	NA	NA
Furans	NA	NA

ppm: Parts per million (mg/kg)
ppb: Parts per billion (ug/l)
NA : Not available as of August 28, 1989

AECs can be found in the Revised Sampling Plan, which was conditionally approved by NJDEP in a June 3, 1988 letter that identified two additional AECs. Implementation of this plan on August 1 and 2, 1988, involved the collection of a total of 30 soil samples from 12 borings and a storm sewer catch basin; one water sample from a sump; and two pipe insulation samples from the boiler room. Results of this sampling, including a Phase II Sampling Plan and Cleanup Plan, were submitted to NJDEP in September 1988. Subsequently, ENVIRON completed five hand auger borings in the wooded portion of the property. Results of this sampling were discussed in an addendum to the above report submitted in January 1989.

The Phase I sampling program identified TPHC and cadmium contamination in AECs 1 and 5, VOC and BN contamination in AEC 2, and elevated cadmium concentrations in all areas in the wooded portion of the site. In addition, soils underlying the interior trench were found to contain elevated levels of TPHCs, cadmium, arsenic, phenols, VOCs, and PCBs.

Based on these results and previous observations in AECs 2, 4, and 11, ENVIRON proposed remediation in these areas. In addition, ENVIRON proposed additional sampling in AEC 1 and in the wooded area to confirm Phase I results. The NJDEP, in its October 12, 1989 conditional approval letter, responded to the September 1988 results report, indicating that although the proposed soil sampling was generally acceptable, three monitoring wells should be installed to document ground water quality downgradient of the railroad siding.

ENVIRON implemented the NJDEP-amended Phase II sampling plan in December 1989 and January 1990, completing three monitoring wells, three hollow-stem auger borings, and six hand auger borings. Also, soils were excavated from AECs 2, 4, 10, 11 and 12.

B. Purpose and Scope

In this report ENVIRON presents the results from implementation of the Phase II Sampling Plan. The report discusses the methodologies used to collect samples, presents site-specific hydrogeological and analytical results of soil and ground water sampling, interprets these results in terms of ECRA action levels, and finally, recommends further action to satisfy ECRA requirements.

Polychrome Corporation, Yardville, NJ

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Table 3: Actual Sampling in Areas of Environmental Concern

Areas of Environmental Concern	Sampling Location	Number and Type of Samples per Location	Analyses
1	102, 103 104	Hollow-stem auger borings 3 Soil Samples • 0.5 - 1.0 feet • 2.5 - 3.0 feet • 5.0 - 5.5 feet	Cadmium, TPHC
6	601	Surface Sample	Cadmium
6	602, 603 604, 605	Hand auger borings 3 Soil Samples • 0.0 - 0.5 feet • 1.5 - 2.0 feet • 3.0 - 3.5 feet	Cadmium
Background	BG01, BG02	Hand auger borings 2 Soil Samples • 0.0 - 0.5 feet • 2.0 - 2.5 feet	Cadmium
Background	MW2	Ground Water Sample	TPHC, VOC+15, BN+15, TDS, pH
5	MW3	Ground Water Sample	TPHC, VOC+15, BN+15, TDS, pH
Downgradient	MW4	Ground Water Sample	TPHC, VOC+15, BN+15, TDS, pH
2	201-PE01 through 201-PE04	Post-Excavation Samples • 1.0 - 1.5 feet	VOC+15, BN+15
2	201-PE05	Post-Excavation Sample • 5.0 - 5.5 feet	VOC+15, BN+15
4	401-PE02 through 401-PE04	Post-Excavation Samples • 1.0 - 1.5 feet	TPHC

Table 3: Actual Sampling in Areas of Environmental Concern (continued)

Areas of Environmental Concern	Sampling Location	Number and Type of Samples per Location	Analyses
4	401-PE01	Post-Excavation Sample • 4.0 - 4.5 feet	TPHC
10	1001-PE01 through 1001-PE04	Post-Excavation Samples • 2.0 - 2.5 feet	TPHC, PCBs, VOC+15, phenols As, Cd
10	1001-PE05	Post-Excavation Sample • 6.0 - 6.5 feet	TPHC, PCBs, VOC+15, phenols As, Cd
10	1002-PE01 through 1002-PE04	Post-Excavation Samples • 3.0 - 3.5 feet	TPHC, PCBs, VOC+15, phenols As, Cd
10	1002-PE05	Post-Excavation Sample • 6.0 - 6.5 feet	TPHC, PCBs, VOC+15, phenols As, Cd
11	1101-PE01	Post-Excavation Sample • 0.5 - 1.0 feet	TPHC
2 and 4	401-WC01	Waste Classification Sample - Composite	TPHC, PCBs, Reactivity, RCRA Metals plus Cu and Zn
10	1001-WC01	Waste Classification Sample - Composite	TPHC, PCBs, Reactivity, RCRA Metals plus Cu and Zn, VOCs

two additional hand auger borings at locations recommended by NJDEP. Table 3 presents the sampling locations, actual sampling depths, and analyses performed. All hollow-stem auger borings were drilled by a driller on the staff of J. E. Fritts & Associates, Inc., using a Mobile B-61 rig.

As proposed, ENVIRON collected three samples from each boring in AEC 1. Since the water table was encountered at a depth of less than 6 feet, the depths of the deepest samples were revised. Samples from the hand auger borings in AEC 6 and at background locations were collected from the proposed depths. Tier II data packages for these samples are provided as Volume II.

B. Monitoring Well Installation and Sampling

The NJDEP required that at least two monitoring wells be installed downgradient of the railroad sidings and one monitoring well be installed upgradient of all AECs. The actual locations of these wells are shown on Plate 1 and were surveyed by James M. Stewart, Inc. These locations were based on a presumed northeasterly ground water flow direction and on the site configuration. Given the presumed flow direction, the area directly downgradient of the railroad siding is beneath the building. Thus, one of the downgradient monitoring wells was installed on the opposite side of the property.

Each monitoring well was drilled by a licensed driller on the staff of J. E. Fritts & Associates, using hollow-stem augers. These wells were drilled to depths of 10 to 15 feet and were constructed in accordance with NJDEP specifications for wells monitoring unconsolidated formations.

Two of the wells were constructed with 10 feet of screen set from about 2 feet above to 8 feet below the water table. The third well was constructed with 5 feet of screen because a potentially confining peat layer was encountered at this location.

These wells were developed on December 5, using a suction lift pump and also by manual bailing. Each well was developed for at least one hour, during which the water clarity improved moderately.

Each well was sampled on January 4, 1990 by ENVIRON using dedicated Teflon® bailers. Each well was purged of three well volumes, unless it purged dry, and was allowed to recover to within 2 feet of static water level. In accordance with the October 12, 1989 NJDEP letter, each well was sampled for TPHCs, BN+15, VOC+15, TDS and pH.

C. Soil Excavation

Soils were excavated from AECs 2, 4, 10, 11 and 12 in accordance with the NJDEP-approved Cleanup Plan. A backhoe was used to excavate soil from AECs 2, 4, and 11. Sediments accumulated in AEC 12 were removed manually. In AEC 10, two 10-foot sections of the trench were remediated. Borings 1001 and 1002, which were completed during the Phase I sampling program, were at the midpoint of these excavations. A ram-hoe was used to break the concrete flooring in the trench after a steel pipe was cut and removed. This pipe, which was 6 inches in diameter at Boring 1001 and 8 inches at Boring 1002, was used to convey cooling water to machinery. Soil was then excavated and staged in drums inside the flammable liquids storage building north of the warehouse.

D. Post-Excavation Sampling

Post-excavation samples were collected from each excavation, and analyzed for the proposed parameters, including those additional parameters required by NJDEP. Table 3 lists the actual sampling depths and analyses for each sample.

In AECs 2 and 10, four samples were collected from the walls of excavation, and one sample was obtained from the base of the excavation. Similarly, three sidewall and one floor sample was collected from AEC 4. One sample was collected from the excavation in AEC 11. Samples from AECs 2, 4 and 11 were collected using dedicated wood spatulas. Latex gloves were worn during sampling and were changed following the collection of each sample.

Samples from AEC 10 excavations were collected with a hand auger or a stainless steel ladle. Plate 2 shows the locations of each post-excavation sample in this AEC. These items were decontaminated using the NJDEP-recommended seven-step process. An equipment blank was collected to verify the effectiveness of the decontamination.

III. HYDROGEOLOGICAL FINDINGS

A. Site Geology and Setting

The Polychrome Corporation facility is located in the Coastal Plain Physiographic Province in an area where Wisconsin-age stratified drift is the surficial deposit. The underlying formation is the Merchantville Clay, a black, glauconitic micaceous clay that is 50 to 60 feet thick. This formation rests disconformably on the Magothy Formation, which is composed of fine white sands and clays, with characteristic carbonized wood. The Raritan Formation underlies the Magothy but is geologically similar, and thus, the two formations are often referred to as one formation.

Ground surface elevations typically range from 60 to 100 feet above mean sea level. Surface water drainage is generally to the northwest, by a stream partially following the railroad siding. The small stream discharges into Back Creek to the north. This creek flows west to the Crosswicks Creek system, which flows southwest into the Delaware River. Approximately half of the property has been developed for industrial use. The remainder is wooded, with moderate to dense undergrowth.

The predominant sediment types at this facility are an orange-brown silty clay, often with gray mottles and gravel or sand, and a medium to coarse sand with up to 50% subrounded gravel. The gravelly sand is frequently interbedded with minor beds of fine silty sand. Black clayey silt was encountered at depths of 8.5 to 10.5 feet, beneath which is a gray-brown sandy silt. Geologic logs for the three wells and three borings installed at the site are provided in Attachment 1.

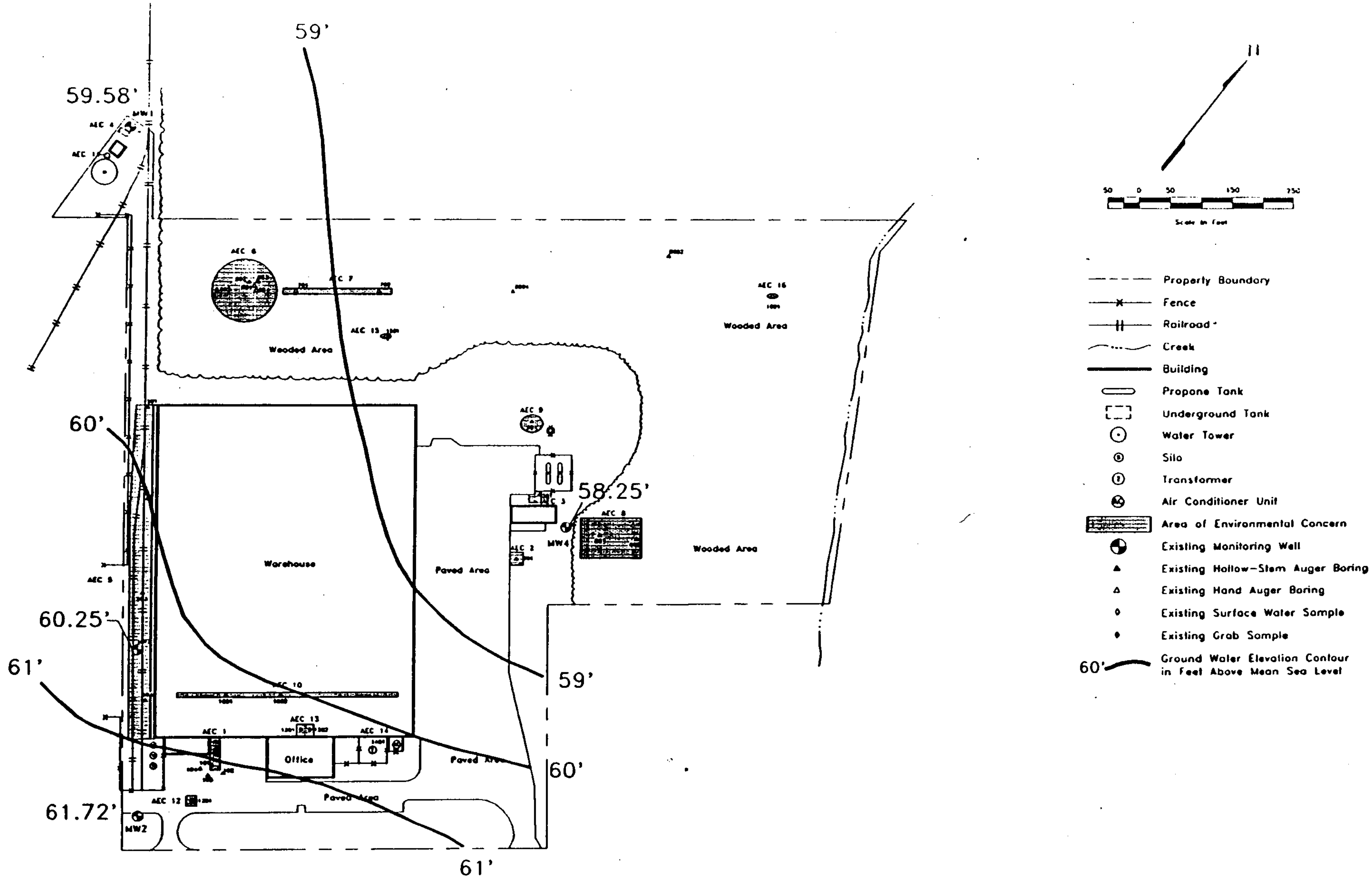
B. Regional Hydrogeology

The Polychrome facility is located in an area underlain by the Magothy and Raritan Formations, the principal aquifer used for drinking and industrial waters in the region. The coarse, well sorted sand lenses of the Raritan are particularly important for water supply purposes. These formations are isolated hydraulically from the surficial aquifer by the regionally extensive Merchantville Clay.

ENVIRON completed a search of wells within one-half mile of the Polychrome site, including well locations from the NJGS Case Index and water withdrawal points as provided by the Bureau of Water Allocation. No wells were identified within this radius. Attachment 2 provides the well records and radius printouts from NJDEP. As this printout indicates, the nearest water withdrawal point in the downgradient direction is more than three miles from the site.

C. Site Hydrogeology

The four monitoring wells at this site are completed in a dense, sandy silt with minor amounts of clay, typical of the glacial stratified drift present at the surface throughout much of the region. These wells are screened above a micaceous silt layer encountered at 8 to 10 feet below grade, likely the upper surface of the Merchantville Clay Formation. Ground water elevations were measured at the four wells on February 5 and March 7, 1990. In addition, elevations were measured at MWs 2, 3, and 4 during ground water sampling on January 4, 1990; the lock on MW1 could not be opened at that time, and thus was not measured.



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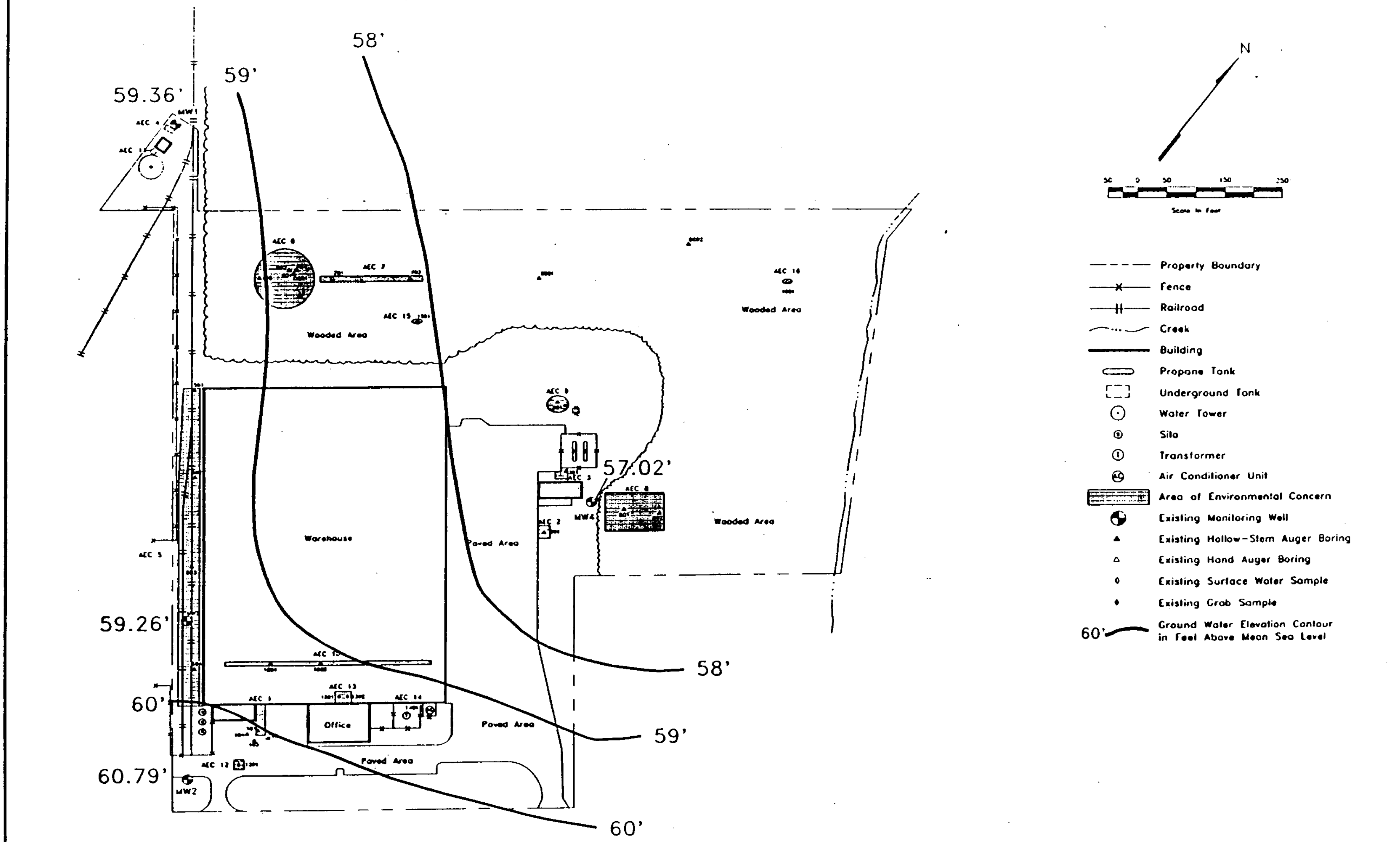
FEBRUARY 1990

GROUND WATER ELEVATIONS AND CONTOURS

Figure 1a



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MARCH 1990
GROUND WATER ELEVATIONS AND CONTOURS

Figure 1b

Table 4 provides elevations collected at these times. The February 5 and March 7 data are shown on Figures 1a and 1b, respectively. As these data indicate, the direction of ground water flow is to the north-northeast to north-northwest, with a gradient of about 0.005 feet/foot.

It is likely that the monitoring wells at this site are screened across the entire saturated thickness of the surficial aquifer. The Merchantville Clay was encountered during drilling of each well. The bottom of the well screen was set at the surface of the clay. It is also probable that this aquifer discharges to the nearest surface water body, Back Creek located approximately 1000 feet northeast of the downgradient property boundary. This creek flows west, then south, emptying into Gropp Lake in Yardville.

These ground water elevation data indicate that the direction of flow varies from north-northwest in the portion of the site beneath the warehouse to north-northeast in the area west of the warehouse. Flow direction in these areas may be affected by local recharge from two adjoining unpaved areas, the grass area bordering Route 130 and the railraod siding. Despite these localized variations, overall ground water flow is toward Back Creek.

Polychrome Corporation, Yardville, NJ

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Table 4: Ground Water Elevations

Monitoring Well	Date and Ground Water Elevation		
	January 4	February 5	March 7
MW1	-	59.58	59.36
MW2	60.78	61.72	60.79
MW3	60.48	60.25	59.26
MW4	56.57	58.25	57.02

609A:2074f

IV. PRESENTATION OF ANALYTICAL RESULTS AND DISCUSSION

A. Overview

Analytical results are discussed below in relation to informal ECRA guidance levels. This comparison is made only as an aid to presentation of the data, and neither ENVIRON nor Polychrome suggest that these levels are an appropriate basis for site remediation. Summarized laboratory data sheets are included as Attachment 3 whereas the complete Tier II data packages are provided as Volume 2.

B. AEC 1

Soil samples were collected from three soil borings in this AEC and analyzed for cadmium and TPHCs. The concentrations of these parameters in each of the nine soil samples are shown on Table 5.

As these data indicate, TPHC concentrations above 100 ppm are confined to the soil surface. Cadmium levels negligibly above 3 ppm are present at Borings 102 and 104 and do not exhibit a trend with depth.

Soil sampling results from AEC 1 from this phase of sampling demonstrate that TPHC contamination is confined to the soil surface. Although the 5.0-foot sample from Phase I Boring 101 was contaminated with TPHCs, it was collected from the auger flights, and thus may be inaccurate. Unlike TPHC levels, cadmium concentrations do not exhibit a trend with depth, indicating that this constituent is not present as a result of industrial activity. For example, cadmium levels at Boring 104 are minimally above 3 ppm and remain essentially unchanged from the surface to 5 feet. Thus, ENVIRON does not believe that cadmium concentrations warrant remediation. In addition, ENVIRON does not believe that TPHC levels in this area require remediation. The levels are only slightly above 100 ppm and occur only at the surface. BNs or VOCs typically associated with petroleum products were not detected in any of the samples from Boring 101, installed in 1988. A more likely source of this minimal surficial contamination is the overlying macadam. Furthermore, the presence of paving prevents vertical migration of the TPHCs. Thus, ENVIRON does not believe remediation is appropriate in AEC 1.

C. AEC 6 and Background

Soil samples were collected from four hand auger borings and from one surface location in AEC 6 and analyzed for cadmium. No sample had a detectable concentration of cadmium. Similarly, cadmium levels in soil samples from the two background hand auger borings were also below method detection limits.

Previous sampling conducted in AECs 6, 7, 15 and 16, all located in the wooded portion of the property, identified cadmium in soils at concentrations between 6 and 58 parts per million (ppm).

ENVIRON discussed these apparently conflicting sets of data with representatives of AnalytiKEM, the laboratory which performed the 1988 analyses. According to AnalytiKEM, the 1988 results are erroneous and are from a period when cadmium concentrations were determined from two wavelengths which were subject to interferences from iron. The primary wavelength was as specified in the EPA Method, while the secondary wavelength was recommended by the instrument manufacturer. A letter from AnalytiKEM to ENVIRON explaining this error is provided as Attachment 4.

Polychrome Corporation, Yardville, NJ

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Table 5: Cadmium and TPHC Concentrations in Soil Samples from AEC 1

Boring	102	103	104
	Cadmium Concentrations		
Depth			
0.5	ND	ND	3.1
2.5	3.7	ND	3.1
5.0	ND	2.8	3.2
	TPHC Concentrations		
0.5	730	340	250
2.5	77	ND	ND
5.0	ND	35	ND

Notes: All concentrations are in part per million.
Depths provided are in feet to top of sampling interval.

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As a result of the iron interference, a tertiary wavelength has been added to the analytical protocol to avoid any further analytical misinterpretation. The Phase II results were verified using the tertiary wavelength, as described in this letter.

Based on its discussion with AnalytiKEM and on the Phase II sampling results, ENVIRON believes that cadmium is not present above ECRA guidance levels in the wooded portion of the site. Thus, in ENVIRON's judgment, no further characterization of this area is necessary.

D. Ground Water

As required by NJDEP, ground water samples were collected from MWs 2, 3, and 4 and analyzed for TPHCs, BN+15, VOC+15, TDS, and pH. TPHCs and BNs were not detected in these samples. Table 6 presents concentrations of VOCs in these wells. The Tier II data package is provided as Volume II.

The ground water results confirm conclusions based on the Phase I soil data from AEC 5, demonstrating that former waste oil disposal activities did not impact ground water quality in this area. Thus, in ENVIRON's judgment, no further characterization of AEC 5 is necessary.

In its October 12, 1989 letter, NJDEP requested details regarding the investigation into the existence of a drainage pit in AEC 5, the active railroad siding. In this request, NJDEP refers to this feature, depicted in an August 1965 engineering proposal for railroad track refurbishment and drainage system improvement, as the "existing drain and drainage pit". However, the engineering sketch actually depicts the "existing drain" as the small ditch that is still present between the railroad and the property boundary. This existing ditch drains stormwater along the tracks to the northeast, where it discharges into Back Creek. No information has been provided to NJDEP which indicates that any of the proposed drainage system improvements were actually implemented. As previously reported to NJDEP, ENVIRON, during its many inspections of this property, has not been able to find any visible evidence that any of the proposed drainage system revisions have been constructed.

NJDEP has expressed concern that the proposed drainage pit, if installed, could have acted as a collection point for waste oil disposed on the railroad siding. This concern is not consistent with information provided regarding these disposal practices and with Phase I and Phase II data. As indicated in the SES, uncontrolled waste oil disposal occurred between 1961 and 1965. Afterwards, the area was remediated and new ballast was emplaced; the drainage proposal was prepared at this time. Waste oil disposal that subsequently occurred was to a much lesser degree, and in 1973 all oil-saturated ballast was again removed. Phase I soil sampling demonstrated that this disposal did not impact soils beneath the ballast. Thus, migration of oil to the alleged drainage pit would have been unlikely, as this would have impacted soil quality beneath the railroad tracks.

Ground water analyses from MW3, the monitoring well installed in the railroad siding, demonstrate that the former waste oil disposal practices in this area have not impacted ground water quality. Thus although ENVIRON has not conducted a subsurface investigation to verify the absence of this feature, ENVIRON believes that soil and ground water data indicate that this pit, if installed, would have not been affected by the minimal amount of waste oil disposal that occurred after 1965. Thus, no further characterization in AEC 5 is proposed.

The ground water data indicate that the only well with detectable VOC concentrations is MW4, the well downgradient of the building and most areas of industrial activity. The only area at the site in which any of the VOCs at MW4 were detected is AEC 10, the interior floor trench. Tetrachloroethene and 1,1,1-trichloroethane were identified in the surface sample from Phase I Boring 1001. These compounds were also identified in several of the post-excavation samples from AEC 10 including the 6.0-foot sample from the Boring 1002 excavation. Polychrome did not use any of these compounds during its occupancy of this site. Although data from AEC 10 are limited, they suggest that the soils underlying the trench may be a source for the ground water contaminants at MW4. Discussions with Monsanto personnel regarding its activities during its ownership and operation of the site indicate that cooling water was circulated through this trench. During a 1987 inspection involving NJDEP personnel, small cracks in the concrete lining were observed. Recirculating cooling water may have leached the VOCs into the ground water via these damaged areas. It is possible that the remaining VOCs at MW4, trichloroethene and trans-1,2-dichloroethene, are degradation products of the tetrachloroethene.

E. Post-Excavation Results

1. AEC 2

Soil was excavated from AEC 2, an area where in 1982, NJDEP observed a pile of absorbent material with a chemical odor. Sampling conducted during the Phase I program identified one BN and several VOCs at concentrations exceeding 10 and 1 ppm, respectively. Five post-excavation samples were collected from AEC 2, four from the sidewalls at a depth immediately below the surficial gravel fill and the fifth from the excavation floor. Each of these samples was analyzed for BN+15 and VOC+15. One targeted BN, bis (2-ethylhexyl) phthalate was detected in three of these samples at concentrations from 49 to 110 ppb, all below method detection limits (MDLs). This compound is present most likely as a result of sample handling with latex gloves. Similarly, one targeted VOC, methylene chloride, was identified in only one sample at 660 ppb, below the MDL.

The forward library searches performed on these samples tentatively identified two VOCs and no BNs. One of the VOC TICs, 1,1,2-Trichloro-1,2,2-trifluoroethane, is present most likely due to cross-contamination by foam packing materials. The other VOC TIC, acetone, was detected in one of the sidewall samples at an estimated concentration of 32 ppm. This compound was not detected in the Phase I samples from this area. Acetone was used during decontamination of sampling equipment and is likely present as a residue of that procedure. In ENVIRON's judgment, the

Polychrome Corporation, Yardville, NJ

ECRA Case No. 86122

Table 6: Concentrations of Volatile Organic Compounds in Ground Water

Monitoring Well	VOC	Concentration[3]
MW2	ND[2]	----
MW3	ND	----
MW4	Tetrachloroethene	250
	Trichloroethene	61
	Trans-1,2-dichloroethene	61
	1,1,1-Trichloroethane	26

1 MW1 not sampled per NJDEP recommendations
2 None detected
3 In micrograms per liter, i.e., parts per billion

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post-excavation results indicate that the excavation conducted in AEC 2 effectively remediated the BN and VOC contamination in this area. However, at the time this excavation is backfilled, a confirmatory sample will be collected from the location where acetone was detected to verify that it is not present in soils at unacceptable levels.

2. AEC 4

A 2,000-gallon, No. 2 fuel oil storage tank was formerly present in AEC 4. This tank failed a Petro-Tite® test as a result of an improperly installed return line that was observed during tank removal in February 1986. One monitoring well has been installed in this area. Analytical results from this location indicate the presence of TPHCs in soils at a maximum concentration of 74 ppm, but none in ground water. Following the tank removal, post-excavation samples were collected. Each was analyzed for TPHCs and two were analyzed for BN+15. TPHCs were not detected in these samples. BNs were found at levels between 0.55 and 1.2 ppm. No soil was removed at this time.

About 10 cubic yards of soil was excavated from AEC 4 in February 1990. Four post-excavation samples were collected from this area and analyzed for TPHCs. Three of these samples were obtained from the sidewalls from a depth directly below the layer of surface vegetation. The fourth sample was collected from the excavation floor. TPHCs were detected in only one sample, at a level of 330 ppm, collected from the side of the excavation adjacent to the aboveground tank pad. This minimally elevated TPHC concentration is isolated and, in ENVIRON's judgment, does not warrant further remediation. Additional excavation at this location would compromise the integrity of this pad. Second, previous sampling has confirmed that BNs are not associated with the TPHCs in this area. Last, the sample collected from the excavation floor did not contain detectable levels of TPHCs. Therefore, no further excavation is proposed in this area.

3. AEC 10

Five post-excavation samples were collected from each of the two excavations in AEC 10 and analyzed for TPHCs, VOC+15, PCBs, arsenic, cadmium and phenols. TPHCs, VOCs, PCBs and arsenic were identified at concentrations exceeding ECRA guidance levels. Plate 2 presents the concentrations of those parameters, and phenols, at each of the ten locations. TPHCs are present above 100 ppm at all of the locations. Cadmium was not identified at levels above 3 ppm, whereas arsenic was present slightly above 20 ppm at only two locations. Phenols were detected at all locations at concentrations between 2.2 and 110 ppm. PCBs were identified at all the locations at concentrations between 3.4 ppm and 872 ppm. The two Aroclors present at each location were Aroclor 1242, present at the higher concentration in each sample, and Aroclor 1254, present at much lower values, frequently below the MDL. Four VOCs were detected:

tetrachloroethene, 1,1,1-trichloroethane, methylene chloride and toluene. VOC concentrations ranged from 220 ppb, below the ECRA action level, to 13,580 ppb. Although PCB contamination was consistently detected in these post-excavation samples, VOC contamination was detected sporadically at few locations.

The pattern of VOC and PCB contamination at the Boring 1001 excavation suggests that these contaminants attenuate with depth. At Boring 1001, the total VOC concentration was lowest in the floor sample. Similarly, the PCB concentration in that floor sample was significantly less than three of the four sidewall samples.

Conversely, VOC and PCB concentrations at the Boring 1002 excavation increase with depth. The sample at the excavation floor was the only sample from this excavation with a VOC level above the ECRA action level. Similarly, the PCB level in that floor sample is greater than three of the four sidewall samples. The concentration of TPHCs is also greatest in that floor sample.

Currently available information regarding previous use of this trench does not indicate a mechanism to explain the marked increase in contaminant levels with depth at the Boring 1002 excavation. Also, contaminant levels in all samples collected from slightly beneath the building floor are similar to those collected from beneath the trench floor lining. This suggests that contamination may extend to some degree beneath the warehouse floor. These data also indicate that contamination extends beyond the maximum depth of excavation at both locations.

Information obtained thus far from discussions with former Monsanto personnel on the use of this trench indicate that cooling water for blow-molding machinery was circulated through the trench. During excavation, reinforcing steel bars were encountered in the cement trench floor. These bars extended into the sidewalls, suggesting that the trench was lined with cement concurrent with the installation of the building floor.

4. AEC 11

After several cubic feet of soil were removed from beneath the fill pipe for the aboveground fuel oil tank in this AEC, one post-excavation sample was collected for TPHC analysis. TPHCs were not detected in this sample, demonstrating that this excavation remediated the surficial staining and that no further work is needed in this area.

IV. ADDITIONAL PROPOSED SAMPLING

A. Ground Water

Based on its review of the Phase II data, ENVIRON believes that additional ground water sampling is necessary to define the extent of the VOC contamination detected at MW4. Two additional monitoring wells are proposed to delineate more fully the extent of this contamination. MW5 will be installed proximate to the building near the downgradient end of the interior trench to determine if the trench is the contaminant source area. MW6 will be installed about 100 feet downgradient of MW4 to determine the extent to which VOCs may have migrated in the downgradient direction. These wells will be constructed according to NJDEP recommendations for wells monitoring unconsolidated formations and will be screened at the surface of the Merchantville Clay. Ground water samples will be collected from MW2 through MW6 and analyzed for VOC+15. Additional analyses are not proposed because no other parameters were detected in ground water at unacceptable levels. Following review of the data, ENVIRON will evaluate the need for ground water remediation, or for additional soil remediation in AEC 10.

B. AEC 10 and Building Interior

The post-excavation sampling data from AEC 10 indicate that Phase I and II soil sampling may not have defined the lateral and vertical extent of contamination. These data also suggests that contamination may extend beneath the building floor and along the length of the trench. Therefore, ENVIRON believes that limited sampling of soils along the trench and beneath the building floor is appropriate. The sampling proposed below is designed for screening purposes only, i.e., to determine whether the trench is the contaminant source area and if the contamination has impacted soils beyond the confines of the trench. Should this sampling identify additional areas of contamination, further sampling may be proposed. Plate 3 shows the locations of all proposed sampling. Table 7 lists the proposed sampling locations, depths and analyses.

One boring will be installed at each end of the trench. These borings, Borings 1003 and 1004, will be drilled to the water table or to the surface of the Merchantville Clay, whichever is encountered first, to verify the lateral and vertical extent of contamination. Continuous split spoons will be collected to document soil conditions and the depth to the surface of the Merchantville Clay. Three soil samples will be taken at each boring: from the soil surface, from immediately above the water table if encountered above the Merchantville Clay, and from an intermediate depth. These samples will be analyzed for TPHCs and PCBs. ENVIRON proposes these parameters for screening purposes and will assume that intervals contaminated with these compounds also contain elevated concentrations of the other constituents previously detected in AEC 10, e.g., VOCs, arsenic and phenolics. ENVIRON believes that PCB levels will drive any further remediation that may be required. However, ENVIRON will screen these samples with a PID to determine qualitatively the presence of VOCs.

ENVIRON also proposes to install four borings through the floor to determine whether contamination has migrated beyond the sides of the trench. Three of these borings, Borings 1005, 1006 and 1007, will be

Polychrome Corporation, Yardville, NJ

ECRA Case No. 86122

Table 7: Proposed Sampling in Vicinity of AEC 10

Area of Environmental Concern	Sampling Location	Number and Type of Samples per Location	Analyses
10	1003, 1004	Hollow-Stem Auger Borings 3 Soil Samples • 1.0-1.5 feet • 4.5-5.0 feet • 7.5-8.0 feet	TPHCs, PCBs
10	1005, 1006, 1007	Hollow-Stem Auger Borings 3 Soil Samples • 1.0-1.5 feet • 3.0-3.5 feet • 6.0-6.5 feet	TPHCs, PCBs
10	MW2-MW6	Ground Water Samples	VOCs

Note: Proposed sampling depths for borings are based on assumed floor thickness of 1 foot and depth to ground water of 8 feet. Actual sampling depths may be different based on conditions encountered during sampling.

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completed at the Boring 1002 excavation, where surface PCB levels were higher. Two of these borings will be installed about 3 feet from either side of the trench and the third, ten feet from the trench. Soil samples will be collected from three depths: the soil surface, the level of the trench floor and the level of the excavation floor. The last boring, Boring 1008, will be installed near Boring 1004, located at the downgradient end of the trench. The sampling depths at this location will be similar to those at Boring 1005. All samples from these borings will be analyzed for TPHCs and PCBs.

ENVIRON and Polychrome are proceeding with the above proposed interior sampling to expedite evaluation of potential remediation plans and contaminant delineation. Results of this at-peril sampling will be submitted to NJDEP following internal review.

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ATTACHMENT 1

Polychrome, Yardville, NJ

Boring No. 102

Geologic Log

0.0 - 0.5'	Asphalt and stone fill
0.5 - 1.0'	Gray and light brown silty clay
1.0 - 5.0'	Orange brown silty clay with gray-brown sandy zones

Drilling Specifications

Drilling Method: Hollow-stem auger
Rig: Mobile B-61
Drilling Company: J.E. Fritts & Associates, Inc.
Date Drilled: December 4, 1989
Plugging Material: Cuttings

Split Spoons

Split Spoon No.	Depth	Blow Counts	Hammer	Recovery
1	1 - 3' bgs	5, 5, 7, 8	140 lbs.	24"
2	3 - 5' bgs	8, 12, 18, 21	140 lbs.	6"
3	4 - 6' bgs	6, 8, 9, 8	140 lbs.	12"

Samples Collected

Sample ID No.	Date	Analyses	Depth
609A-0102-SB01	12/4/89	TPHCs, Cd	0.5-1.0
609A-0102-SB02	12/4/89	TPHCs, Cd	2.0-2.5
609A-0102-SB03	12/4/89	TPHCs, Cd	4.5-5.0

Polychrome, Yardville, N

Boring No. 103

Geologic Log

0.0 - 0.5'	Asphalt and stone fill
0.5 - 6.0'	Orange-brown and gray silty clay, minor sand

Drilling Specifications

Drilling Method: Hollow-stem auger
Rig: Mobile B-61
Drilling Company: J.E. Fritts & Associates, Inc.
Date Drilled: December 4, 1989
Plugging Material: Cuttings

Split Spoons

Split Spoon No.	Depth	Blow Counts	Hammer	Recovery
1	1 - 3' bgs	5, 5, 10, 11	140 lbs.	24"
2	4 - 6' bgs	6, 6, 6, 9	140 lbs.	3"

Samples Collected

Sample ID No.	Date	Analyses	Depth
609A-0103-SB01	12/4/89	TPHCs, Cd	0.5-1.0
609A-0103-SB02	12/4/89	TPHCs, Cd	2.5-3.0
609A-0103-SB03	12/4/89	TPHCs, Cd	5.0-5.5

Polychrome, Yardville, NJ

Boring No. 104

Geologic Log

0.0 - 0.5'	Asphalt and stone fill
0.5 - 5.5'	Orange-brown and gray silty clay

Drilling Specifications

Drilling Method: Hollow-stem auger
Rig: Mobile B-61
Drilling Company: J.E. Fritts & Associates, Inc.
Date Drilled: December 4, 1989
Plugging Material: Cuttings

Split Spoons

Split Spoon No.	Depth	Blow Counts	Hammer	Recovery
1	1 - 3' bgs	6, 5, 11, 13	140 lbs.	24"

Samples Collected

Sample ID No.	Date	Analyses	Depth
609A-0104-SB01	12/4/89	TPHCs, Cd	0.5-1.0
609A-0104-SB02	12/4/89	TPHCs, Cd	2.5-3.0
609A-0104-SB03	12/4/89	TPHCs, Cd	5.0-5.5

MONITORING WE[illegible] [illegible]RTIFICATION - FORM A - AS-BU[illegible] [illegible]ERTIFICATION
(One form must be completed for each well)

Name of Permittee:	Polychrome Corporation
Name of Facility:	Polychrome Corporation
Location:	584 Route 130 Yardville, NJ
NJPDES Permit No:	none

CERTIFICATION

Well Permit Number (As assigned by NJDEP's Well Drilling Permits Section (609-984-6831)):	28-24440-1
Owner's Well Number (As shown on the application or plans):	MW2
Well Completion Date:	12/5/89
Distance from Top of Casing (cap off) to Ground Surface (one-hundredth of a foot):	2.54
Total Depth of Well (one-hundredth of a foot):	16.96
Depth to Top of Screen from Top of Casing (one-hundredth of a foot):	6.96
Screen Length (feet):	10
Screen or Slot Size:	No. 20 slot
Screen or Slot Material:	PVC
Casing Material (PVC, Steel or Other-Specify):	PVC
Casing Diameter (inches):	4
Static Water Level from Top of Casing at the Time of Installation (one-hundredth of a foot):	7.38
Yield (gallons per minute):	1.5
Length of Time Well Pumped or Bailed	1 Hour
Lithologic Log:	Attach

Authentication

I certify under penalty of law that, where applicable, I meet the requirements as specified on the reverse of this page, that I have personally examined and am familiar with the information submitted in this document and all attachments, and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Bruce O. HIgbee
Name (Type or Print)

Bruce O. Higbee
Signature

1226
Certification or License No.

SEAL

Certification by Executive Officer or Duly Authorized Representative

William Kraft
Name (Type or Print)

William Kraft
Signature

Staff Geologist
Title

March 23, 1990
Date

7065A:2093f/022290

Polychrome, Yardville, NJ

Monitoring Well No. 2

Permit No. 28-24440-1

Borehole Elevation: 65.89

Top-of-casing Elevation: 68.16

Geologic Log

0.0 - 3.5'	Brown silty medium sand, minor subrounded quartz gravel and cobbles
3.5 - 4.5'	Silty sand with angular gravel
4.5 - 6.8'	Orange-brown silty sand with gray-brown leached zones
6.8 - 8.5'	Gray-brown clayey silt
8.5 - 14.0'	Black clayey silt
14.0 - 15.0'	Gray-brown sandy silt, wet

Drilling Specifications

Drilling Method: Hollow-stem auger
Rig: Mobile B-61
Driller/License No.: Bruce Higbee, #1226
Drilling Company: J.E. Fritts & Associates, Inc.
Date Drilled: December 5, 1989

Monitoring Well Specifications

	Depth	Material/Type	Diameter	Cap
Protective casing	3' bgs - 2' ags	Steel Schedule 40	8 in.	Steel locking cap
Inner casing	2' ags - 5' bgs	PVC Schedule 40	4 in.	PVC vented cap
Screen	5' bgs - 15' bgs	PVC No. 20 slot	4 in.	PVC end cap
Grout	0' ags - 3' bgs	Bentonite - cement	---	---
Bentonite seal	3' bgs - 4' bgs	Pellets	---	---
Sand pack	4' bgs - 15' bgs	No. 2 Well sand	---	---

bgs = below ground surface, ags = above ground surface

Split Spoons

Split Spoon No.	Depth	Blow Counts	Hammer	Recovery
1	5 - 7' bgs	9, 11, 11, 13	140 lb.	24"
2	8 - 10' bgs	5, 8, 9, 14	140 lb.	24"
3	13 - 15' bgs	6, 7, 10, 15	140 lb.	24"

Observations

Development time: 1.5 hours
Estimated yield: 1 gallon/hour

THIS FORM MUST BE COMPLETED BY THE PERMITTEE OR HIS/HER AGENT

GROUND WATER MONITORING WELL CERTIFICATION-FORM B-LOCATION CERTIFICATION

Name of Permittee: Polychrome Corporation
Name of Facility: same
Location: 584 Route 130, Yardville, NJ
NJPDES Permit No: NA

LAND SURVEYOR'S CERTIFICATION

Well Permit Number (As assigned by NJDEP's Water Allocation Section, (609-984-6831): This number must be permanently affixed to the well casing. 28244401

Longitude (one-tenth of a second): West 74°39'21.67"
Latitude (one tenth of a second): North 40°11'14.74"
Elevation of Top of Casing (cap off) (one-hundredth of a foot): 68.16
Owner's Well Number (As shown on the application or plans): MW-2

AUTHENTICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments, and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

James M Stewart
PROFESSIONAL LAND SURVEYOR'S SIGNATURE

James M. Stewart
PROFESSIONAL LAND SURVEYOR'S NAME
(Please print or type)

SEAL

26108
PROFESSIONAL LAND SURVEYOR'S LICENSE

The Department reserves the right in cases of violation of permit specified ground water limits or Ground Water Quality Standards (N.J.A.C. 7:9-6.1 et seq.) to require that wells be resurveyed to an accuracy of one-hundredth of a second latitude and longitude. This shall not be considered to be a major modification of the NJPDES permit.

1003d/082489

MONITORING WE ~~C~~ERTIFICATION - FORM A - AS-BU . CERTIFICATION
(One form must be completed for each well)

Name of Permittee:	Polychrome Corporation
Name of Facility:	Polychrome Corporation
Location:	584 Route 130 Yardville, NJ
NJPDES Permit No:	none

CERTIFICATION

Well Permit Number (As assigned by NJDEP's Well Drilling Permits Section (609-984-6831)):	2 8 - 2 4 4 4 1 - 9
Owner's Well Number (As shown on the application or plans):	MW3
Well Completion Date:	12/4/89
Distance from Top of Casing (cap off) to Ground Surface (one-hundredth of a foot):	0.40
Total Depth of Well (one-hundredth of a foot):	13.06
Depth to Top of Screen from Top of Casing (one-hundredth of a foot):	3.06
Screen Length (feet):	10
Screen or Slot Size:	No. 20 slot
Screen or Slot Material:	PVC
Casing Material (PVC, Steel or Other-Specify):	PVC
Casing Diameter (inches):	4
Static Water Level from Top of Casing at the Time of Installation (one-hundredth of a foot):	1.48
Yield (gallons per minute):	1.5
Length of Time Well Pumped or Bailed	1 Hour
Lithologic Log:	Attach

Authentication

I certify under penalty of law that, where applicable, I meet the requirements as specified on the reverse of this page, that I have personally examined and am familiar with the information submitted in this document and all attachments, and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Bruce O. Higbee
Name (Type or Print)

Bruce O. Higbee
Signature

1226
Certification or License No.

SEAL

Certification by Executive Officer or Duly Authorized Representative

William Kraft
Name (Type or Print)

William Kraft
Signature

Staff Geologist
Title

March 23, 1990
Date

7065A:2093f/022290

Polychrome, Yardville, NJ

Monitoring Well No. 3

Permit No. 28-24441-9

Borehole Elevation: 61.87

Top-of-casing Elevation: 61.96

Geologic Log

0.0 - 1.0'	Crushed stone, wet
1.0 - 7.0'	Orange-brown sandy silt, minor clay
7.0 - 13.0'	Gray silty clay

Drilling Specifications

Drilling Method: Hollow-stem auger
Rig: Mobile B-61
Driller/License No.: Bruce Higbee, #1226
Drilling Company: J.E. Fritts & Associates, Inc.
Date Drilled: December 4, 1989

Monitoring Well Specifications

	Depth	Material/Type	Diameter	Cap
Protective Casing	Flushmount	Steel	8 in.	Steel locking
Inner casing	0' ags - 3' bgs	PVC Schedule 40	4 in.	PVC vented cap
Screen	3' bgs - 13' bgs	PVC No. 20 slot	4 in.	PVC end cap
Grout	0' ags - 1' bgs	Bentonite - cement	—	—
Bentonite seal	1' bgs - 2' bgs	Pellets	—	—
Sand pack	2' bgs - 13' bgs	No. 2 Well sand	—	—

bgs = below ground surface, ags = above ground surface

Split Spoons

Split Spoon No.	Depth	Blow Counts	Hammer	Recovery
1	5 - 7' bgs	8, 6, 9, 15	140 lbs.	0"
2	7 - 9' bgs	7, 9, 8, 11	140 lbs.	0"

Observations

Development time: 1.5 hours
Estimated yield: 1.5 gallons/hour

THIS FORM MUST BE COMPLETED BY THE PERMITTEE OR HIS/HER AGENT

GROUND WATER MONITORING WELL CERTIFICATION-FORM B-LOCATION CERTIFICATION

Name of Permittee: Polychrome Corporation
Name of Facility: same
Location: 584 Route 130, Yardville, NJ
NJPDES Permit No: NA

LAND SURVEYOR'S CERTIFICATION

Well Permit Number (As assigned by NJDEP's Water Allocation Section, (609-984-6831): This number must be permanently affixed to the well casing. 28244419

Longitude (one-tenth of a second): West 74°39'23.94"
Latitude (one tenth of a second): North 40°11'16.85"
Elevation of Top of Casing (cap off) (one-hundredth of a foot): 61.96
Owner's Well Number (As shown on the application or plans): MW-3

AUTHENTICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments, and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

James M Stewart
PROFESSIONAL LAND SURVEYOR'S SIGNATURE

James M. Stewart
PROFESSIONAL LAND SURVEYOR'S NAME
(Please print or type)

SEAL

26108
PROFESSIONAL LAND SURVEYOR'S LICENSE

The Department reserves the right in cases of violation of permit specified ground water limits or Ground Water Quality Standards (N.J.A.C. 7:9-6.1 et seq.) to require that wells be resurveyed to an accuracy of one-hundredth of a second latitude and longitude. This shall not be considered to be a major modification of the NJPDES permit.

MONITORING WE[illegible] [illegible]RTIFICATION - FORM A - AS-BU[illegible] [illegible]ERTIFICATION
(One form must be completed for each well)

Name of Permittee:	Polychrome Corporation
Name of Facility:	Polychrome Corporation
Location:	584 Route 130 Yardville, NJ
NJPDES Permit No:	none

CERTIFICATION

Well Permit Number (As assigned by NJDEP's Well Drilling Permits Section (609-984-6831)):	2 8 - 2 4 4 4 2 - 7
Owner's Well Number (As shown on the application or plans):	MW4
Well Completion Date:	12/4/89
Distance from Top of Casing (cap off) to Ground Surface (one-hundredth of a foot):	2.58
Total Depth of Well (one-hundredth of a foot):	11.44
Depth to Top of Screen from Top of Casing (one-hundredth of a foot):	6.44
Screen Length (feet):	5
Screen or Slot Size:	No. 20 slot
Screen or Slot Material:	PVC
Casing Material (PVC, Steel or Other-Specify):	PVC
Casing Diameter (inches):	4
Static Water Level from Top of Casing at the Time of Installation (one-hundredth of a foot):	8.44
Yield (gallons per minute):	0.5
Length of Time Well Pumped or Bailed	1 Hour
Lithologic Log:	Attach

Authentication

I certify under penalty of law that, where applicable, I meet the requirements as specified on the reverse of this page, that I have personally examined and am familiar with the information submitted in this document and all attachments, and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Bruce O. Higbee
Name (Type or Print)

Bruce O. Higbee
Signature

1226
Certification or License No.

SEAL

Certification by Executive Officer or Duly Authorized Representative

William Kraft
Name (Type or Print)

William D. Kraft
Signature

Staff Geologist
Title

March 23, 1990
Date

7065A:2093f/022290

Polychrome, Yardville, NJ

Monitoring Well No. 4

Permit No. 28-24442-7

Borehole Elevation: 63.20

Top-of-casing Elevation: 65.01

Geologic Log

0.0 - 2.0'	Loose yellow-brown silty sand
2.0 - 9.5'	Orange-brown fine to medium silty sand, minor subrounded gravel, wet at 6 feet
9.5 - 10.5'	Orange clayey silt, dry
10.5 - 12.0'	Black silt

Drilling Specifications

Drilling Method: Hollow-stem auger
Rig: Mobile B-61
Driller/License No.: Bruce Higbee, #1226
Drilling Company: J.E. Fritts & Associates, Inc.
Date Drilled: December 4, 1989

Monitoring Well Specifications

	Depth	Material/Type	Diameter	Cap
Protective casing	3' bgs - 2' ags	Steel Schedule 40	8 in.	Steel locking cap
Inner casing	2' ags - 5' bgs	PVC Schedule 40	4 in.	PVC vented cap
Screen	5' bgs - 10' bgs	PVC No. 20 slot	4 in.	PVC end cap
Grout	0' ags - 3' bgs	Bentonite - cement	—	—
Bentonite seal	3' bgs - 4' bgs	Pellets	—	—
Sand pack	4' bgs - 10' bgs	No. 2 Well sand	—	—

bgs = below ground surface, ags = above ground surface

Split Spoons

Split Spoon No.	Depth	Blow Counts	Hammer	Recovery
1	5 - 7' bgs	12, 13, 12, 12	140 lbs.	18"
2	10 - 12' bgs	5, 6, 7, 12	140 lbs.	24"

Observations

Development time: 1.5 hours
Estimated yield: .5 gallon/hour

THIS FORM MUST BE COMPLETED BY THE PERMITTEE OR HIS/HER AGENT

GROUND WATER MONITORING WELL CERTIFICATION-FORM B-LOCATION CERTIFICATION

Name of Permittee: Polychrome Corporation
Name of Facility: Same
Location: 584 Route 130, Yardville, NJ
NJPDES Permit No: NA

LAND SURVEYOR'S CERTIFICATION
Well Permit Number (As assigned by NJDEP's Water Allocation Section, (609-984-6831): This number must be permanently affixed to the well casing. 28244427

Longitude (one-tenth of a second): West 74°39'18.62"
Latitude (one tenth of a second): North 40°11'22.36"
Elevation of Top of Casing (cap off) (one-hundredth of a foot): 65.01
Owner's Well Number (As shown on the application or plans): MW-4

AUTHENTICATION
I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments, and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

James M. Stewart
PROFESSIONAL LAND SURVEYOR'S SIGNATURE

James M. Stewart
PROFESSIONAL LAND SURVEYOR'S NAME
(Please print or type)

SEAL

26108
PROFESSIONAL LAND SURVEYOR'S LICENSE

The Department reserves the right in cases of violation of permit specified ground water limits or Ground Water Quality Standards (N.J.A.C. 7:9-6.1 et seq.) to require that wells be resurveyed to an accuracy of one-hundredth of a second latitude and longitude. This shall not be considered to be a major modification of the NJPDES permit.

ATTACHMENT 2

28.21956

Handex

HANDEX CORP., 703 Ginesi Drive, Morganville, New Jersey 07751 (201) 536-8500

BORING LOG

Well No. H-7 Application No. ______ Permit No. 28-15075

Date Drilled 4/5/85 County Mercer Use monitor

Location South Broad and Lakeside, Yardville, New Jersey

Owner Shell Oil Company Address West Orange, New Jersey

Drilling Method solid augers Sampling Method cuttings

Hole Diameter 8" Total Depth 16'

Casing:

Type PVC Schedule 40 Diameter 4" Length 6'

Screen:

Type PVC Schedule 40 Slot 20 Diameter 4" Length 10'

Gravel Pack Size #1 Casing Seal bentonite

Static Water Level ______ Geologic Formation ______

DEPTH BELOW SURFACE	SAMPLE NUMBER	BLOWS PER 6" ON SAMPLER	WELL DESIGN	IDENTIFICATION OF SOILS/REMARKS
			Casing	0'-4' Brown medium to fine SAND, little medium to fine gravel, little- silt
				4'-11' Dark brown medium to fine SAND, some coarse to fine gravel, little silt
10'			Well Screen	11'-14' Orange brown medium to fine SAND, trace- silt
				NOTE: Gasoline odor at 11'
				14'-19' Light brown coarse to fine SAND, little- medium to fine gravel, trace- silt
				NOTE: Occasional 1/4" clay stringer
20'				19' White silty CLAY
30'				

28.21956

Handex

HANDEX CORP., 703 Ginesi Drive, Morganville, New Jersey 07751 (201) 536-8500

BORING LOG

Well No. 11 Application No. ______ Permit No. 28-15076
Date Drilled 4/5/85 County Mercer Use monitor
Location South Broad and Lakeside, Yardville, New Jersey
Owner Shell Oil Company Address West Orange, New Jersey
Drilling Method solid augers Sampling Method split spoon
Hole Diameter 8" Total Depth 16'

Casing:
Type PVC Schedule 40 Diameter 4" Length 6'

Screen:
Type PVC Schedule 40 Slot 20 Diameter 4" Length 10'
Gravel Pack Size #1 Casing Seal bentonite
Static Water Level ______ Geologic Formation ______

DEPTH BELOW SURFACE	SAMPLE NUMBER	BLOWS PER 6" ON SAMPLER	WELL DESIGN	IDENTIFICATION OF SOILS/REMARKS
			Casing	0'-3'6" Brown medium to fine SAND, little+ coarse to fine gravel, little+ silt, FILL--concrete
				3'5"-5' Dark grey medium to fine SAND, little+ medium to fine gravel, little silt
				5'-6' Light brown medium to fine SAND, little+ medium to fine gravel, trace silt
	S-1a	9'-10'	Well Screen	6'-9' Tan grey medium to fine SAND, trace gravel, trace silt
10'	S-1b	10'-11'		9'-10'6" Tan medium to fine SAND, trace silt
				10'6"-11' Tan medium GRAVEL and medium to fine SAND
	S-2	11'-13'		11'-13' Tan medium to fine SAND, laminated, little silt (seams)
				13'-19' Orange tan medium to fine SAND, water saturated
20'				
30'				

ATTACHMENT 3

AnalytiKEM

VIII. Analytical Results (Cont'd)

General Chemistry

Parameter	Method Blank	Sample Designation A20914-1 609A MW02 GW01	A20914-2 609A MW03 GW01
Petroleum Hydrocarbons, by IR	1,000 U	1,000 U	1,000 U
pH, units	--	5.2	3.8
Total Dissolved Solids	10,000 U	110,000	190,000
Units	(ug/l)	(ug/l)	(ug/l)

Parameter	Sample Designation A20914-3 609A MW04 GW01	A20914-4 609A MW02 WB01	A20914-5 609A 0606 SB01
Petroleum Hydrocarbons, by IR	1,000 U	1,000 U	NR
pH, units	6.2	NR	NR
Total Solids	NR	NR	75
Total Dissolved Solids	150,000	NR	NR
Units	(ug/l)	(ug/l)	(%)

AnalytiKEM

VIII. Analytical Results (Cont'd)

Metals

	Sample Designation	
Parameter	Method Blank	A20914-5 609A 0606 SB01
Cadmium, total	1,000 U	1,300 U
Units	(ug/kg)	(ug/kg dw)

AnalytiKEM

VIII. Analytical Results (Cont'd)

EPA/NIH/NBS Nontargetted Library Search

No nontargetted compounds were detected in the following samples:

Volatile Method Blank 1	A20914-1 609A MW02 GW01
Volatile Method Blank 2	A20914-6 609A 0104 TB01
Semivolatile Method Blank	

AnalytiKEM Designation A20914-2

Client Designation 609A MW03 GW01

CAS Number	Compound Name	Fraction	Scan Number	Estimated Concentration (ug/l)
	None Detected	VOA	--	---
	Unknown Compound	BNA	602	8.6

AnalytiKEM Designation A20914-3

Client Designation 609A MW04 GW01

CAS Number	Compound Name	Fraction	Scan Number	Estimated Concentration (ug/l)
	Unknown Compound	VOA	307	38

AnalytiKEM Designation A20914-4

Client Designation 609A MW02 WB01

CAS Number	Compound Name	Fraction	Scan Number	Estimated Concentration (ug/l)
67-64-1	2-Propanone (Acetone)	VOA	263	7.1
	None Detected	BNA	--	---

Note: Estimated concentration is calculated against the nearest eluting internal standard.

AnalytiKEM

Analytical Results (Cont'd)

Semivolatile Organics - Base Neutrals

Parameter	Method Blank	A20914-1 609A MW02 GW01	A20914-2 609A MW03 GW01	A20914-3 609A MW04 GW01	A20914-4 609A MW02 WB01
		Sample Designation			
N-Nitrosodimethylamine	10 U	10 U	10 U	10 U	10 U
Bis(2-chloroethyl) Ether	10 U	10 U	10 U	10 U	10 U
1,3-Dichlorobenzene	10 U	10 U	10 U	10 U	10 U
1,4-Dichlorobenzene	10 U	10 U	10 U	10 U	10 U
1,2-Dichlorobenzene	10 U	10 U	10 U	10 U	10 U
Bis(2-chloroisopropyl) Ether	10 U	10 U	10 U	10 U	10 U
N-Nitrosodipropylamine	10 U	10 U	10 U	10 U	10 U
Hexachloroethane	10 U	10 U	10 U	10 U	10 U
Nitrobenzene	10 U	10 U	10 U	10 U	10 U
Isophorone	10 U	10 U	10 U	10 U	10 U
Bis(2-chloroethoxy)methane	10 U	10 U	10 U	10 U	10 U
1,2,4-Trichlorobenzene	10 U	10 U	10 U	10 U	10 U
Naphthalene	10 U	10 U	10 U	10 U	10 U
Hexachlorobutadiene	10 U	10 U	10 U	10 U	10 U
Hexachlorocyclopentadiene	10 U	10 U	10 U	10 U	10 U
2-Chloronaphthalene	10 U	10 U	10 U	10 U	10 U
Dimethyl Phthalate	10 U	10 U	10 U	10 U	10 U
Acenaphthylene	10 U	10 U	10 U	10 U	10 U
Acenaphthene	10 U	10 U	10 U	10 U	10 U
2,4-Dinitrotoluene	10 U	10 U	10 U	10 U	10 U
2,6-Dinitrotoluene	10 U	10 U	10 U	10 U	10 U
Diethyl Phthalate	10 U	10 U	10 U	10 U	14
4-Chlorophenyl Phenyl Ether	10 U	10 U	10 U	10 U	10 U
Fluorene	10 U	10 U	10 U	10 U	10 U
N-Nitrosodiphenylamine	10 U	10 U	10 U	10 U	10 U
4-Bromophenyl Phenyl Ether	10 U	10 U	10 U	10 U	10 U
Hexachlorobenzene	10 U	10 U	10 U	10 U	10 U
Phenanthrene	10 U	10 U	10 U	10 U	10 U
Anthracene	10 U	10 U	10 U	10 U	10 U
Dibutyl Phthalate	10 U	10 U	10 U	10 U	10 U
Fluoranthene	10 U	10 U	10 U	10 U	10 U
Benzidine	100 U	100 U	100 U	100 U	100 U
Pyrene	10 U	10 U	10 U	10 U	10 U
Butylbenzyl Phthalate	10 U	10 U	10 U	10 U	10 U
3,3'-Dichlorobenzidine	20 U	20 U	20 U	20 U	20 U
Benzo(a)anthracene	10 U	10 U	10 U	10 U	10 U
Bis(2-ethylhexyl) Phthalate	10 U	1.2 J	10 U	4.0 J	2.9 J
Chrysene	10 U	10 U	10 U	10 U	10 U
Dioctyl Phthalate	10 U	10 U	10 U	10 U	10 U
Benzo(b)fluoranthene	10 U	10 U	10 U	10 U	10 U
Benzo(k)fluoranthene	10 U	10 U	10 U	10 U	10 U
Benzo(a)pyrene	10 U	10 U	10 U	10 U	10 U
Indeno(1,2,3-cd)pyrene	10 U	10 U	10 U	10 U	10 U
Dibenzo(a,h)anthracene	10 U	10 U	10 U	10 U	10 U
Benzo(g,h,i)perylene	10 U	10 U	10 U	10 U	10 U
Units	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)

AnalytiKEM

VIII. Analytical Results (Cont'd)

Volatile Organics

		Sample Designation		
Parameter	Method Blank 2	A20914-2 609A MW03 GW01	A20914-3 609A MW04 GW01	A20914-4 609A MW02 WB01
Chloromethane	10 U	10 U	10 U	10 U
Bromomethane	10 U	10 U	10 U	10 U
Vinyl Chloride	10 U	10 U	10 U	10 U
Chloroethane	10 U	10 U	10 U	10 U
Methylene Chloride	10 U	10 U	10 U	10 U
1,1-Dichloroethene	10 U	10 U	10 U	10 U
1,1-Dichloroethane	10 U	10 U	10 U	10 U
trans-1,2-Dichloroethene	10 U	10 U	61	10 U
Chloroform	10 U	10 U	10 U	10 U
1,2-Dichloroethane	10 U	10 U	10 U	10 U
1,1,1-Trichloroethane	10 U	10 U	26	10 U
Carbon Tetrachloride	10 U	10 U	10 U	10 U
Bromodichloromethane	10 U	10 U	10 U	10 U
1,2-Dichloropropane	10 U	10 U	10 U	10 U
trans-1,3-Dichloropropene	10 U	10 U	10 U	10 U
Trichloroethene	10 U	10 U	61	10 U
Dibromochloromethane	10 U	10 U	10 U	10 U
1,1,2-Trichloroethane	10 U	10 U	10 U	10 U
Benzene	10 U	10 U	10 U	10 U
cis-1,3-Dichloropropene	10 U	10 U	10 U	10 U
2-Chloroethyl Vinyl Ether	10 U	10 U	10 U	10 U
Bromoform	10 U	10 U	10 U	10 U
Tetrachloroethene	10 U	10 U	250	10 U
1,1,2,2-Tetrachloroethane	10 U	10 U	10 U	10 U
Toluene	10 U	10 U	10 U	10 U
Chlorobenzene	10 U	10 U	10 U	10 U
Ethylbenzene	10 U	10 U	10 U	10 U
m-Xylene	10 U	10 U	10 U	10 U
o,p-Xylene	10 U	10 U	10 U	10 U
Units	(ug/l)	(ug/l)	(ug/l)	(ug/l)

AnalytiKEM

VIII. Analytical Results

Volatile Organics

Parameter	Method Blank 1	A20914-1 609A MW02 GW01	A20914-6 609A 0104 TB01
		Sample Designation	
Chloromethane	10 U	10 U	10 U
Bromomethane	10 U	10 U	10 U
Vinyl Chloride	10 U	10 U	10 U
Chloroethane	10 U	10 U	10 U
Methylene Chloride	10 U	10 U	10 U
1,1-Dichloroethene	10 U	10 U	10 U
1,1-Dichloroethane	10 U	10 U	10 U
trans-1,2-Dichloroethene	10 U	10 U	10 U
Chloroform	10 U	10 U	10 U
1,2-Dichloroethane	10 U	10 U	10 U
1,1,1-Trichloroethane	10 U	10 U	10 U
Carbon Tetrachloride	10 U	10 U	10 U
Bromodichloromethane	10 U	10 U	10 U
1,2-Dichloropropane	10 U	10 U	10 U
trans-1,3-Dichloropropene	10 U	10 U	10 U
Trichloroethene	10 U	10 U	10 U
Dibromochloromethane	10 U	10 U	10 U
1,1,2-Trichloroethane	10 U	10 U	10 U
Benzene	10 U	10 U	10 U
cis-1,3-Dichloropropene	10 U	10 U	10 U
2-Chloroethyl Vinyl Ether	10 U	10 U	10 U
Bromoform	10 U	10 U	10 U
Tetrachloroethene	10 U	10 U	10 U
1,1,2,2-Tetrachloroethane	10 U	10 U	10 U
Toluene	10 U	10 U	10 U
Chlorobenzene	10 U	10 U	10 U
Ethylbenzene	10 U	10 U	10 U
m-Xylene	10 U	10 U	10 U
o,p-Xylene	10 U	10 U	10 U
Units	(ug/l)	(ug/l)	(ug/l)

VII. Analytical Results (Cont'd)

Metals

Sample Designation				Parameter Cadmium, total
Method Blank				1,000 U
A20770-1	609A	0602	SB01	1,200 U
A20770-2	609A	0602	SB02	1,100 U
A20770-3	609A	0602	SB03	1,200 U
A20770-4	609A	0603	SB01	1,200 U
A20770-5	609A	0603	SB02	1,100 U
A20770-6	609A	0603	SB03	1,200 U
A20770-7	609A	0604	SB01	1,200 U
A20770-8	609A	0604	SB02	1,100 U
A20770-9	609A	0604	SB03	1,200 U
A20770-10	609A	0605	SB01	1,200 U
A20770-11	609A	0605	SB02	1,100 U
A20770-12	609A	0605	SB03	1,200 U
A20770-13	609A	BC01	SB01	1,300 U
A20770-14	609A	BG01	SB02	1,200 U
A20770-15	609A	BG03	SB01	1,200 U
A20770-16	609A	BG02	SB02	1,200 U
A20770-17	Field Blank 609A	 0603	 WB01	10 U *
Units				(ug/kg dw)

* (ug/l)

AnalytiKEM

III. Summary of Analytical Results

The following is a summary of the total constituents identified in the samples. All results are rounded to two significant figures.

Sample Designation	Parameter: Cadmium, total
A20749-1 609A-102 SB01	ND
A20749-2 609A-0102 SB02	3,700
A20749-3 609A-0102 SB03	2,600 J
A20749-4 609A-103 SB01	1,900 J
A20749-5 609A-0103 SB02	1,700 J
A20749-6 609A-0103 SB03	2,800
A20749-7 609A-0104 SB01	3,100
A20749-8 609A-0104 SB02	3,100
A20749-9 609A-0104 SB03	3,200
Units	(ug/kg dw)

Sample Designation	Petroleum Hydrocarbons, by IR
A20749-1 609A-102 SB01	730,000
A20749-2 609A-0102 SB02	77,000
A20749-3 609A-0102 SB03	ND
A20749-4 609A-103 SB01	340,000
A20749-5 609A-0103 SB02	ND
A20749-6 609A-0103 SB03	35,000
A20749-7 609A-0104 SB01	250,000
A20749-8 609A-0104 SB02	ND
A20749-9 609A-0104 SB03	ND
Units	(ug/kg dw)

AnalytiKEM

VIII. Analytical Results

Volatile Organics

Parameter	Method Blank 1	A21268-1 609A-1002-PE01	A21268-2 609A-1002-PE02	A21268-3 609A-1002-PE03
		Sample Designation		
Chloromethane	330 U	380 U	360 U	360 U
Bromomethane	330 U	380 U	360 U	360 U
Vinyl Chloride	330 U	380 U	360 U	360 U
Chloroethane	330 U	380 U	360 U	360 U
Methylene Chloride	330 U	380 U	360 U	360 U
1,1-Dichloroethene	330 U	380 U	360 U	360 U
1,1-Dichloroethane	330 U	380 U	360 U	360 U
trans-1,2-Dichloroethene	330 U	380 U	360 U	360 U
Chloroform	330 U	380 U	360 U	360 U
1,2-Dichloroethane	330 U	380 U	360 U	360 U
1,1,1-Trichloroethane	330 U	380 U	360 U	360 U
Carbon Tetrachloride	330 U	380 U	360 U	360 U
Bromodichloromethane	330 U	380 U	360 U	360 U
1,2-Dichloropropane	330 U	380 U	360 U	360 U
trans-1,3-Dichloropropene	330 U	380 U	360 U	360 U
Trichloroethene	330 U	380 U	360 U	360 U
Dibromochloromethane	330 U	380 U	360 U	360 U
1,1,2-Trichloroethane	330 U	380 U	360 U	360 U
Benzene	330 U	380 U	360 U	360 U
cis-1,3-Dichloropropene	330 U	380 U	360 U	360 U
2-Chloroethyl Vinyl Ether	330 U	380 U	360 U	360 U
Bromoform	330 U	380 U	360 U	360 U
Tetrachloroethene	330 U	380 U	220 J	360 U
1,1,2,2-Tetrachloroethane	330 U	380 U	360 U	360 U
Toluene	330 U	380 U	360 U	280 J
Chlorobenzene	330 U	380 U	360 U	360 U
Ethylbenzene	330 U	380 U	360 U	360 U
m-Xylene	330 U	380 U	360 U	360 U
o,p-Xylene	330 U	380 U	360 U	360 U
Units	(ug/kg)	(ug/kg dw)	(ug/kg dw)	(ug/kg dw)

AnalytiKEM

VIII. Analytical Results (Cont'd)

Volatile Organics

Parameter	Method Blank 1	A21268-4 609A-1002-PE04	A21268-5 609A-1002-PE05	A21268-6 609A-1001-PE01
		Sample Designation		
Chloromethane	330 U	370 U	430 U	380 U
Bromomethane	330 U	370 U	430 U	380 U
Vinyl Chloride	330 U	370 U	430 U	380 U
Chloroethane	330 U	370 U	430 U	380 U
Methylene Chloride	330 U	370 U	670	560
1,1-Dichloroethene	330 U	370 U	430 U	380 U
1,1-Dichloroethane	330 U	370 U	430 U	380 U
trans-1,2-Dichloroethene	330 U	370 U	430 U	380 U
Chloroform	330 U	370 U	430 U	380 U
1,2-Dichloroethane	330 U	370 U	430 U	380 U
1,1,1-Trichloroethane	330 U	370 U	6,600	1,900
Carbon Tetrachloride	330 U	370 U	430 U	380 U
Bromodichloromethane	330 U	370 U	430 U	380 U
1,2-Dichloropropane	330 U	370 U	430 U	380 U
trans-1,3-Dichloropropene	330 U	370 U	430 U	380 U
Trichloroethene	330 U	370 U	430 U	380 U
Dibromochloromethane	330 U	370 U	430 U	380 U
1,1,2-Trichloroethane	330 U	370 U	430 U	380 U
Benzene	330 U	370 U	430 U	380 U
cis-1,3-Dichloropropene	330 U	370 U	430 U	380 U
2-Chloroethyl Vinyl Ether	330 U	370 U	430 U	380 U
Bromoform	330 U	370 U	430 U	380 U
Tetrachloroethene	330 U	370 U	5,700	1,100
1,1,2,2-Tetrachloroethane	330 U	370 U	430 U	380 U
Toluene	330 U	370 U	510	470
Chlorobenzene	330 U	370 U	430 U	380 U
Ethylbenzene	330 U	370 U	430 U	380 U
m-Xylene	330 U	370 U	430 U	380 U
o,p-Xylene	330 U	370 U	430 U	380 U
Units	(ug/kg)	(ug/kg dw)	(ug/kg dw)	(ug/kg dw)

AnalytiKEM

VIII. Analytical Results (Cont'd)

Volatile Organics

Parameter	Method Blank 2	A21268-8 609A-1001-PE03	A21268-9 609A-1001-PE04	A21268-10 609A-1001-PE05
		Sample Designation		
Chloromethane	330 U	370 U	370 U	420 U
Bromomethane	330 U	370 U	370 U	420 U
Vinyl Chloride	330 U	370 U	370 U	420 U
Chloroethane	330 U	370 U	370 U	420 U
Methylene Chloride	330 U	370 U	370 U	510
1,1-Dichloroethene	330 U	370 U	370 U	420 U
1,1-Dichloroethane	330 U	370 U	370 U	420 U
trans-1,2-Dichloroethene	330 U	370 U	370 U	420 U
Chloroform	330 U	370 U	370 U	420 U
1,2-Dichloroethane	330 U	370 U	370 U	420 U
1,1,1-Trichloroethane	330 U	740	370 U	420 U
Carbon Tetrachloride	330 U	370 U	370 U	420 U
Bromodichloromethane	330 U	370 U	370 U	420 U
1,2-Dichloropropane	330 U	370 U	370 U	420 U
trans-1,3-Dichloropropene	330 U	370 U	370 U	420 U
Trichloroethene	330 U	370 U	370 U	420 U
Dibromochloromethane	330 U	370 U	370 U	420 U
1,1,2-Trichloroethane	330 U	370 U	370 U	420 U
Benzene	330 U	370 U	370 U	420 U
cis-1,3-Dichloropropene	330 U	370 U	370 U	420 U
2-Chloroethyl Vinyl Ether	330 U	370 U	370 U	420 U
Bromoform	330 U	370 U	370 U	420 U
Tetrachloroethene	330 U	510	1,200	250 J
1,1,2,2-Tetrachloroethane	330 U	370 U	370 U	420 U
Toluene	330 U	370 U	370 U	420 U
Chlorobenzene	330 U	370 U	370 U	420 U
Ethylbenzene	330 U	370 U	370 U	420 U
m-Xylene	330 U	370 U	370 U	420 U
o,p-Xylene	330 U	370 U	370 U	420 U
Units	(ug/kg)	(ug/kg dw)	(ug/kg dw)	(ug/kg dw)

AnalytiKEM

VIII. Analytical Results (Cont'd)

Volatile Organics

Parameter	Method Blank 2	A21268-11 609A-0201-PE01	A21268-13 609A-0201-PE03	A21268-14 609A-0201-PE04
		Sample Designation		
Chloromethane	330 U	390 U	400 U	400 U
Bromomethane	330 U	390 U	400 U	400 U
Vinyl Chloride	330 U	390 U	400 U	400 U
Chloroethane	330 U	390 U	400 U	400 U
Methylene Chloride	330 U	390 U	400 U	400 U
1,1-Dichloroethene	330 U	390 U	400 U	400 U
1,1-Dichloroethane	330 U	390 U	400 U	400 U
trans-1,2-Dichloroethene	330 U	390 U	400 U	400 U
Chloroform	330 U	390 U	400 U	400 U
1,2-Dichloroethane	330 U	390 U	400 U	400 U
1,1,1-Trichloroethane	330 U	390 U	400 U	400 U
Carbon Tetrachloride	330 U	390 U	400 U	400 U
Bromodichloromethane	330 U	390 U	400 U	400 U
1,2-Dichloropropane	330 U	390 U	400 U	400 U
trans-1,3-Dichloropropene	330 U	390 U	400 U	400 U
Trichloroethene	330 U	390 U	400 U	400 U
Dibromochloromethane	330 U	390 U	400 U	400 U
1,1,2-Trichloroethane	330 U	390 U	400 U	400 U
Benzene	330 U	390 U	400 U	400 U
cis-1,3-Dichloropropene	330 U	390 U	400 U	400 U
2-Chloroethyl Vinyl Ether	330 U	390 U	400 U	400 U
Bromoform	330 U	390 U	400 U	400 U
Tetrachloroethene	330 U	390 U	400 U	400 U
1,1,2,2-Tetrachloroethane	330 U	390 U	400 U	400 U
Toluene	330 U	390 U	400 U	400 U
Chlorobenzene	330 U	390 U	400 U	400 U
Ethylbenzene	330 U	390 U	400 U	400 U
m-Xylene	330 U	390 U	400 U	400 U
o,p-Xylene	330 U	390 U	400 U	400 U
Units	(ug/kg)	(ug/kg dw)	(ug/kg dw)	(ug/kg dw)

VIII. Analytical Results (Cont'd)

Volatile Organics

Sample Designation

Parameter	Method Blank 3	A21268-25 609A-1001-WB01	A21268-26 609A-0214-TB01
Chloromethane	10 U	10 U	10 U
Bromomethane	10 U	10 U	10 U
Vinyl Chloride	10 U	10 U	10 U
Chloroethane	10 U	10 U	10 U
Methylene Chloride	10 U	10 U	10 U
1,1-Dichloroethene	10 U	10 U	10 U
1,1-Dichloroethane	10 U	10 U	10 U
trans-1,2-Dichloroethene	10 U	10 U	10 U
Chloroform	10 U	10 U	10 U
1,2-Dichloroethane	10 U	10 U	10 U
1,1,1-Trichloroethane	10 U	10 U	10 U
Carbon Tetrachloride	10 U	10 U	10 U
Bromodichloromethane	10 U	10 U	10 U
1,2-Dichloropropane	10 U	10 U	10 U
trans-1,3-Dichloropropene	10 U	10 U	10 U
Trichloroethene	10 U	10 U	10 U
Dibromochloromethane	10 U	10 U	10 U
1,1,2-Trichloroethane	10 U	10 U	10 U
Benzene	10 U	10 U	10 U
cis-1,3-Dichloropropene	10 U	10 U	10 U
2-Chloroethyl Vinyl Ether	10 U	10 U	10 U
Bromoform	10 U	10 U	10 U
Tetrachloroethene	10 U	10 U	10 U
1,1,2,2-Tetrachloroethane	10 U	10 U	10 U
Toluene	10 U	10 U	10 U
Chlorobenzene	10 U	10 U	10 U
Ethylbenzene	10 U	10 U	10 U
m-Xylene	10 U	10 U	10 U
o,p-Xylene	10 U	10 U	10 U
Units	(ug/l)	(ug/l)	(ug/l)

AnalytiKEM

VIII. Analytical Results (Cont'd)

Volatile Organics

Sample Designation

Parameter	Method Blank 4	A21268-7 609A-1001-PE02	A21268-12 609A-0201-PE02	A21268-15 609A-0201-PE05	A21268-22 609A-1[illegible] WC01
Chloromethane	330 U	360 U	400 U	410 U	400 U
Bromomethane	330 U	360 U	400 U	410 U	400 U
Vinyl Chloride	330 U	360 U	400 U	410 U	400 U
Chloroethane	330 U	360 U	400 U	410 U	400 U
Methylene Chloride	330 U	490	660	410 U	400 U
1,1-Dichloroethene	330 U	360 U	400 U	410 U	400 U
1,1-Dichloroethane	330 U	360 U	400 U	410 U	400 U
trans-1,2-Dichloroethene	330 U	360 U	400 U	410 U	400 U
Chloroform	330 U	360 U	400 U	410 U	400 U
1,2-Dichloroethane	330 U	360 U	400 U	410 U	400 U
1,1,1-Trichloroethane	330 U	7,900	400 U	410 U	400 U
Carbon Tetrachloride	330 U	360 U	400 U	410 U	400 U
Bromodichloromethane	330 U	360 U	400 U	410 U	400 U
1,2-Dichloropropane	330 U	360 U	400 U	410 U	400 U
trans-1,3-Dichloropropene	330 U	360 U	400 U	410 U	400 U
Trichloroethene	330 U	360 U	400 U	410 U	400 U
Dibromochloromethane	330 U	360 U	400 U	410 U	400 U
1,1,2-Trichloroethane	330 U	360 U	400 U	410 U	400 U
Benzene	330 U	360 U	400 U	410 U	400 U
cis-1,3-Dichloropropene	330 U	360 U	400 U	410 U	400 U
2-Chloroethyl Vinyl Ether	330 U	360 U	400 U	410 U	400 U
Bromoform	330 U	360 U	400 U	410 U	400 U
Tetrachloroethene	330 U	360 U	400 U	410 U	400 U
1,1,2,2-Tetrachloroethane	330 U	360 U	400 U	410 U	400 U
Toluene	330 U	360 U	400 U	410 U	400 U
Chlorobenzene	330 U	360 U	400 U	410 U	400 U
Ethylbenzene	330 U	360 U	400 U	410 U	400 U
m-Xylene	330 U	360 U	400 U	410 U	400 U
o,p-Xylene	330 U	360 U	400 U	410 U	400 U
Units	(ug/kg)	(ug/kg dw)	(ug/kg dw)	(ug/kg dw)	(ug/kg dw)

AnalytiKEM

VIII. Analytical Results (Cont'd)

Semivolatile Organics - Base/Neutrals

Parameter	Method Blank	A21268-11 609A-0201-PE01	A21268-12 609A-0201-PE02	A21268-13 609A-0201-PE03
		Sample Designation		
N-Nitrosodimethylamine	330 U	390 U	400 U	400 U
Bis(2-chloroethyl) Ether	330 U	390 U	400 U	400 U
1,3-Dichlorobenzene	330 U	390 U	400 U	400 U
1,4-Dichlorobenzene	330 U	390 U	400 U	400 U
1,2-Dichlorobenzene	330 U	390 U	400 U	400 U
Bis(2-chloroisopropyl) Ether	330 U	390 U	400 U	400 U
N-Nitrosodipropylamine	330 U	390 U	400 U	400 U
Hexachloroethane	330 U	390 U	400 U	400 U
Nitrobenzene	330 U	390 U	400 U	400 U
Isophorone	330 U	390 U	400 U	400 U
Bis(2-chloroethoxy)methane	330 U	390 U	400 U	400 U
1,2,4-Trichlorobenzene	330 U	390 U	400 U	400 U
Naphthalene	330 U	390 U	400 U	400 U
Hexachlorobutadiene	330 U	390 U	400 U	400 U
Hexachlorocyclopentadiene	330 U	390 U	400 U	400 U
2-Chloronaphthalene	330 U	390 U	400 U	400 U
Dimethyl Phthalate	330 U	390 U	400 U	400 U
Acenaphthylene	330 U	390 U	400 U	400 U
Acenaphthene	330 U	390 U	400 U	400 U
2,4-Dinitrotoluene	330 U	390 U	400 U	400 U
2,6-Dinitrotoluene	330 U	390 U	400 U	400 U
Diethyl Phthalate	330 U	390 U	400 U	400 U
4-Chlorophenyl Phenyl Ether	330 U	390 U	400 U	400 U
Fluorene	330 U	390 U	400 U	400 U
N-Nitrosodiphenylamine	330 U	390 U	400 U	400 U
4-Bromophenyl Phenyl Ether	330 U	390 U	400 U	400 U
Hexachlorobenzene	330 U	390 U	400 U	400 U
Phenanthrene	330 U	390 U	400 U	400 U
Anthracene	330 U	390 U	400 U	400 U
Dibutyl Phthalate	330 U	390 U	400 U	400 U
Fluoranthene	330 U	390 U	400 U	400 U
Benzidine	330 U	390 U	400 U	400 U
Pyrene	3,300 U	3,900 U	4,000 U	4,000 U
Butylbenzyl Phthalate	330 U	390 U	400 U	400 U
3,3'-Dichlorobenzidine	330 U	390 U	400 U	400 U
Benzo(a)anthracene	660 U	780 U	800 U	800 U
Bis(2-ethylhexyl) Phthalate	330 U	390 U	400 U	400 U
Chrysene	330 U	390 U	110 J	400 U
Dioctyl Phthalate	330 U	390 U	400 U	400 U
Benzo(b)fluoranthene	330 U	390 U	400 U	400 U
Benzo(k)fluoranthene	330 U	390 U	400 U	400 U
Benzo(a)pyrene	330 U	390 U	400 U	400 U
Indeno(1,2,3-cd)pyrene	330 U	390 U	400 U	400 U
Dibenzo(a,h)anthracene	330 U	390 U	400 U	400 U
Benzo(g,h,i)perylene	330 U	390 U	400 U	400 U
Units	(ug/kg)	(ug/kg dw)	(ug/kg dw)	(ug/kg dw)

AnalytiKEM

VIII. Analytical Results (Cont'd)

Semivolatile Organics - Base/Neutrals

Parameter	Method Blank	Sample Designation A21268-14 609A-0201-PE04	A21268-15 609A-0201-PE05
N-Nitrosodimethylamine	330 U	410 U	370 U
Bis(2-chloroethyl) Ether	330 U	410 U	370 U
1,3-Dichlorobenzene	330 U	410 U	370 U
1,4-Dichlorobenzene	330 U	410 U	370 U
1,2-Dichlorobenzene	330 U	410 U	370 U
Bis(2-chloroisopropyl) Ether	330 U	410 U	370 U
N-Nitrosodipropylamine	330 U	410 U	370 U
Hexachloroethane	330 U	410 U	370 U
Nitrobenzene	330 U	410 U	370 U
Isophorone	330 U	410 U	370 U
Bis(2-chloroethoxy)methane	330 U	410 U	370 U
1,2,4-Trichlorobenzene	330 U	410 U	370 U
Naphthalene	330 U	410 U	370 U
Hexachlorobutadiene	330 U	410 U	370 U
Hexachlorocyclopentadiene	330 U	410 U	370 U
2-Chloronaphthalene	330 U	410 U	370 U
Dimethyl Phthalate	330 U	410 U	370 U
Acenaphthylene	330 U	410 U	370 U
Acenaphthene	330 U	410 U	370 U
2,4-Dinitrotoluene	330 U	410 U	370 U
2,6-Dinitrotoluene	330 U	410 U	370 U
Diethyl Phthalate	330 U	410 U	370 U
4-Chlorophenyl Phenyl Ether	330 U	410 U	370 U
Fluorene	330 U	410 U	370 U
N-Nitrosodiphenylamine	330 U	410 U	370 U
4-Bromophenyl Phenyl Ether	330 U	410 U	370 U
Hexachlorobenzene	330 U	410 U	370 U
Phenanthrene	330 U	410 U	370 U
Anthracene	330 U	410 U	370 U
Dibutyl Phthalate	330 U	410 U	370 U
Fluoranthene	330 U	410 U	370 U
Benzidine	3,300 U	4,100 U	3,700 U
Pyrene	330 U	410 U	370 U
Butylbenzyl Phthalate	330 U	410 U	370 U
3,3'-Dichlorobenzidine	660 U	820 U	740 U
Benzo(a)anthracene	330 U	410 U	370 U
Bis(2-ethylhexyl) Phthalate	330 U	86 J	49 J
Chrysene	330 U	410 U	370 U
Dioctyl Phthalate	330 U	410 U	370 U
Benzo(b)fluoranthene	330 U	410 U	370 U
Benzo(k)fluoranthene	330 U	410 U	370 U
Benzo(a)pyrene	330 U	410 U	370 U
Indeno(1,2,3-cd)pyrene	330 U	410 U	370 U
Dibenzo(a,h)anthracene	330 U	410 U	370 U
Benzo(g,h,i)perylene	330 U	410 U	370 U
Units	(ug/kg)	(ug/kg dw)	(ug/kg dw)

AnalytiKEM

VIII. Analytical Results (Cont'd)

EPA/NIH/NBS Nontargetted Library Search

No nontargetted compounds were detected in the following samples:

Aqueous Volatile Method Blank 3

AnalytiKEM Designation Volatile Nonaqueous Method Blank 1

CAS Number	Compound Name	Fraction	Scan Number	Estimated Concentration (ug/kg)
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	VOA	387	170
	Unknown Compound	VOA	453	500

AnalytiKEM Designation Volatile Nonaqueous Method Blank 2

CAS Number	Compound Name	Fraction	Scan Number	Estimated Concentration (ug/kg)
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	VOA	388	180
	Unknown Compound	VOA	455	280

AnalytiKEM Designation Volatile Nonaqueous Method Blank 4

CAS Number	Compound Name	Fraction	Scan Number	Estimated Concentration (ug/kg)
	Unknown Compound	VOA	452	290

AnalytiKEM Designation Semivolatile Nonaqueous Method Blank

CAS Number	Compound Name	Fraction	Scan Number	Estimated Concentration (ug/kg)
	Unknown Compound	BN	236	640
	Unknown Compound	BN	267	830
	Unknown Compound	BN	316	1,800
	Unknown Hydrocarbon	BN	329	480

Note: Estimated concentration is calculated against the nearest eluting internal standard.

VIII. Analytical Results (Cont'd)

EPA/NIH/NBS Nontargetted Library Search

AnalytiKEM Designation A21268-1

Client Designation 609A-1002-PE01

CAS Number	Compound Name	Fraction	Scan Number	Estimated Concentration (ug/kg dw)
76-13-1	1,1,2-Trichloro- 1,2,2-trifluoroethane	VOA	386	300
	Unknown Compound	VOA	453	860

AnalytiKEM Designation A21268-2

Client Designation 609A-1002-PE02

CAS Number	Compound Name	Fraction	Scan Number	Estimated Concentration (ug/kg dw)
76-13-1	1,1,2-Trichloro- 1,2,2-trifluoroethane	VOA	386	240

AnalytiKEM Designation A21268-3

Client Designation 609A-1002-PE03

CAS Number	Compound Name	Fraction	Scan Number	Estimated Concentration (ug/kg dw)
76-13-1	1,1,2-Trichloro- 1,2,2-trifluoroethane	VOA	386	230
	Unknown Compound	VOA	423	560
	Unknown Compound	VOA	453	1,000

AnalytiKEM Designation A21268-4

Client Designation 609A-1002-PE04

CAS Number	Compound Name	Fraction	Scan Number	Estimated Concentration (ug/kg dw)
76-13-1	1,1,2-Trichloro- 1,2,2-trifluoroethane	VOA	386	220
	Unknown Compound	VOA	453	660

Note: Estimated concentration is calculated against the nearest eluting internal standard.

AnalytiKEM

VIII. Analytical Results (Cont'd)

EPA/NIH/NBS Nontargetted Library Search

AnalytiKEM Designation A21268-5

Client Designation 609A-1002-PE05

CAS Number	Compound Name	Fraction	Scan Number	Estimated Concentration (ug/kg dw)
	Unknown Compound	VOA	452	970

AnalytiKEM Designation A21268-6

Client Designation 609A-1001-PE01

CAS Number	Compound Name	Fraction	Scan Number	Estimated Concentration (ug/kg dw)
	Unknown Compound	VOA	453	770

AnalytiKEM Designation A21268-7

Client Designation 609A-1001-PE02

CAS Number	Compound Name	Fraction	Scan Number	Estimated Concentration (ug/kg dw)
67-64-1	2-Propanone (Acetone)	VOA	245	18,000
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	VOA	389	1,300

AnalytiKEM Designation A21268-8

Client Designation 609A-1001-PE03

CAS Number	Compound Name	Fraction	Scan Number	Estimated Concentration (ug/kg dw)
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	VOA	388	190
	Unknown Compound	VOA	455	690

Note: Estimated concentration is calculated against the nearest eluting internal standard.

VIII. Analytical Results (Cont'd)

EPA/NIH/NBS Nontargetted Library Search

AnalytiKEM Designation A21268-9

Client Designation 609A-1001-PE04

CAS Number	Compound Name	Fraction	Scan Number	Estimated Concentration (ug/kg dw)
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	VOA	387	280
	Unknown Compound	VOA	454	630

AnalytiKEM Designation A21268-10

Client Designation 609A-1001-PE05

CAS Number	Compound Name	Fraction	Scan Number	Estimated Concentration (ug/kg dw)
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	VOA	388	270
	Unknown Compound	VOA	455	770

AnalytiKEM Designation A21268-11

Client Designation 609A-0201-PE01

CAS Number	Compound Name	Fraction	Scan Number	Estimated Concentration (ug/kg dw)
	Unknown Compound	VOA	244	870
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	VOA	387	190
	Unknown Compound	VOA	454	580
	Unknown Compound	BN	360	780
	Unknown Compound	BN	556	570
	Unknown Compound	BN	617	1,200
	Unknown Compound	BN	703	2,400

Note: Estimated concentration is calculated against the nearest eluting internal standard.

VIII. Analytical Results (Cont'd)

EPA/NIH/NBS Nontargetted Library Search

AnalytiKEM Designation A21268-12

Client Designation 609A-0201-PE02

CAS Number	Compound Name	Fraction	Scan Number	Estimated Concentration (ug/kg dw)
67-64-1	2-Propanone (Acetone)	VOA	246	32,000
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	VOA	390	14,000
	Unknown Compound	BN	556	450
	Unknown Compound	BN	617	1,000
	Unknown Compound	BN	692	190
	Unknown Compound	BN	704	1,700
	Unknown Compound	BN	2148	1,700

AnalytiKEM Designation A21268-13

Client Designation 609A-0201-PE03

CAS Number	Compound Name	Fraction	Scan Number	Estimated Concentration (ug/kg dw)
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	VOA	388	190
	Unknown Compound	VOA	455	680
	Unknown Compound	BN	358	470
	Unknown Compound	BN	555	280
	Unknown Compound	BN	616	420
	Unknown Compound	BN	2146	240

Note: Estimated concentration is calculated against the nearest eluting internal standard.

VIII. Analytical Results (Cont'd)

EPA/NIH/NBS Nontargetted Library Search

AnalytiKEM Designation A21268-14

Client Designation 609A-0201-PE04

CAS Number	Compound Name	Fraction	Scan Number	Estimated Concentration (ug/kg dw)
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	VOA	386	180
	Unknown Compound	VOA	453	550
	Unknown Compound	BN	360	360
	Unknown Compound	BN	505	170
	Unknown Compound	BN	556	370
	Unknown Compound	BN	617	350
	Unknown Compound	BN	702	570
	Unknown Compound	BN	2147	280

AnalytiKEM Designation A21268-15

Client Designation 609A-0201-PE05

CAS Number	Compound Name	Fraction	Scan Number	Estimated Concentration (ug/kg dw)
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	VOA	387	190
	Unknown Compound	BN	362	340
	Unknown Compound	BN	505	200
	Unknown Compound	BN	557	690
	Unknown Compound	BN	618	170
	Unknown Compound	BN	703	490

Note: Estimated concentration is calculated against the nearest eluting internal standard.

VIII. Analytical Results (Cont'd)

EPA/NIH/NBS Nontargetted Library Search

AnalytiKEM Designation A21268-22

Client Designation 609A-1001-WC01

CAS Number	Compound Name	Fraction	Scan Number	Estimated Concentration (ug/kg dw)
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	VOA	388	240

AnalytiKEM Designation A21268-25

Client Designation 609A-1001-WB01

CAS Number	Compound Name	Fraction	Scan Number	Estimated Concentration (ug/l)
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	VOA	388	1.8

AnalytiKEM Designation A21268-26

Client Designation 609A-0214-TB01

CAS Number	Compound Name	Fraction	Scan Number	Estimated Concentration (ug/l)
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	VOA	390	3.2

Note: Estimated concentration is calculated against the nearest eluting internal standard.

VIII. Analytical Results (Cont'd)

Polychlorinated Biphenyls

Parameter	Method Blank	A21268-1 609A-1002-PE01	A21268-2 609A-1002-PE02	A21268-3 609A-1002-PE03
		Sample Designation		
Aroclor 1016	330 U	3,800 U	360,000 U	3,600 U
Aroclor 1221	330 U	3,800 U	360,000 U	3,600 U
Aroclor 1232	330 U	3,800 U	360,000 U	3,600 U
Aroclor 1242	330 U	22,000	680,000	5,400
Aroclor 1248	330 U	3,800 U	360,000 U	3,600 U
Aroclor 1254	330 U	2,100 J	59,000	410
Aroclor 1260	330 U	3,800 U	36,000 U	360 U
Units	(ug/kg)	(ug/kg dw)	(ug/kg dw)	(ug/kg dw)

Parameter	A21268-4 609A-1002-PE04	A21268-5 609A-1002-PE05	A21268-6 609A-1001-PE01	A21268-7 609A-1001-PE02
	Sample Designation			
Aroclor 1016	37,000 U	43,000 U	380 U	36,000 U
Aroclor 1221	37,000 U	43,000 U	380 U	36,000 U
Aroclor 1232	37,000 U	43,000 U	380 U	36,000 U
Aroclor 1242	100,000	520,000	3,200	120,000
Aroclor 1248	37,000 U	43,000 U	380 U	36,000 U
Aroclor 1254	8,200	55,000	170 J	32,000 J
Aroclor 1260	3,700 U	43,000 U	380 U	36,000 U
Units	(ug/kg dw)	(ug/kg dw)	(ug/kg dw)	(ug/kg dw)

Note: All compounds reported at levels exceeding the PQL have been confirmed by alternate column GC.

AnalytiKEM

VIII. Analytical Results (Cont'd)

Polychlorinated Biphenyls

Sample Designation

Parameter	Method Blank	A21268-8 609A-1001-PE03	A21268-9 609A-1001-PE04	A21268-10 609A-1001-PE05
Aroclor 1016	330 U	370,000 U	3,700 U	4,200 U
Aroclor 1221	330 U	370,000 U	3,700 U	4,200 U
Aroclor 1232	330 U	370,000 U	3,700 U	4,200 U
Aroclor 1242	330 U	830,000	79,000	20,000
Aroclor 1248	330 U	370,000 U	3,700 U	4,200 U
Aroclor 1254	330 U	42,000	11,000	3,000 J
Aroclor 1260	330 U	37,000 U	3,700 U	4,200 U
Units	(ug/kg)	(ug/kg dw)	(ug/kg dw)	(ug/kg dw)

Sample Designation

Parameter	A21268-22 609A-1001-WC01	A21268-23 609A-0401-WC01	A21268-24 609A-1000-WC01	A21268-25 609A-1001-WB01
Aroclor 1016	4,000 U	380 U	40,000 U	10 U
Aroclor 1221	4,000 U	380 U	40,000 U	10 U
Aroclor 1232	4,000 U	380 U	40,000 U	10 U
Aroclor 1242	53,000	400	83,000	10 U
Aroclor 1248	4,000 U	380 U	40,000 U	10 U
Aroclor 1254	5,400	44 J	6,700	10 U
Aroclor 1260	4,000 U	380 U	40,000 U	10 U
Units	(ug/kg dw)	(ug/kg dw)	(ug/kg dw)	(ug/l)

Note: All compounds reported at levels exceeding the PQL have been confirmed by alternate column GC.

AnalytiKEM

VIII. Analytical Results (Cont'd)

Reactivity

The observations for Reactivity were as follows:

- The sample(s) did not undergo violent changes under normal conditions.
- The sample(s) did not react violently or form a potentially explosive mixture with water.
- The sample(s) did not appear readily capable of detonation, explosive decomposition or reaction at standard temperature or pressure.
- The sample(s) did not generate toxic gases, vapors or fumes when exposed to pH conditions between 2 and 12.5.
- The results for reactive sulfide and cyanide are as follows:

		Sample Designation		
Parameter	Method Blank	A21268-22 609A-1001-WC01	A21268-23 609A-0401-WC01	A21268-24 609A-1000-WC01
Sulfide	50,000 U	60,000 U	50,000 U	50,000 U;50,000 U*
Cyanide	50,000 U	60,000 U	50,000 U	50,000 U;50,000 U*
Units	(ug/kg)	(ug/kg dw)	(ug/kg dw)	(ug/kg dw)

*Duplicate Analysis.

AnalytiChem

VIII. Analytical Results (Cont'd)

General Chemistry

Sample Designation		Parameter: Phenolics, total, as phenol
Method Blank		250 U
A21268-1	609A-1002-PE01	2,600
A21268-2	609A-1002-PE02	22,000
A21268-3	609A-1002-PE03	2,200
A21268-4	609A-1002-PE04	8,200
A21268-5	609A-1002-PE05	21,000
A21268-6	609A-1001-PE01	15,000
A21268-7	609A-1001-PE02	110,000
A21268-8	609A-1001-PE03	6,000
A21268-9	609A-1001-PE04	46,000
A21268-10	609A-1001-PE05	19,000
A21268-25	609A-1001-WB01	29 *
Units		(ug/kg dw)

*(ug/l)

Sample Designation		Parameter: Petroleum Hydrocarbons, by IR
Method Blank		20,000 U
A21268-1	609A-1002-PE01	200,000
A21268-2	609A-1002-PE02	2,700,000
A21268-3	609A-1002-PE03	1,900,000
A21268-4	609A-1002-PE04	1,900,000
A21268-5	609A-1002-PE05	23,000,000
A21268-6	609A-1001-PE01	1,700,000
A21268-7	609A-1001-PE02	3,000,000
A21268-8	609A-1001-PE03	2,900,000
A21268-9	609A-1001-PE04	1,900,000
A21268-10	609A-1001-PE05	2,400,000
A21268-16	609A-1101-PE01	23,000 U
A21268-17	609A-0401-PE01	23,000 U
A21268-18	609A-0401-PE02	23,000 U
A21268-19	609A-0401-PE03	23,000 U
A21268-20	609A-0401-PE04	330,000
A21268-24	609A-1000-WC01	500,000
A21268-25	609A-1001-WB01	1,000 U*
Units		(ug/kg dw)

*(ug/l)

AnalytiKEM

VIII. Analytical Results (Cont'd)

Metals

Parameter	Method Blank	A21268-1 609A-1002-PE01	A21268-2 609A-1002-PE02	A21268-3 609A-1002-PE03
		Sample Designation		
Arsenic, total	1,000 U	19,000	3,400	6,200
Cadmium, total	1,000 U	1,200 U	1,100 U	1,100 U
Units	(ug/kg)	(ug/kg dw)	(ug/kg dw)	(ug/kg dw)

Parameter	A21268-4 609A-1002-PE04	A21268-5 609A-1002-PE05	A21268-6 609A-1001-PE01	A21268-7 609A-1001-PE02
	Sample Designation			
Arsenic, total	7,200	44,000	13,000	4,300
Cadmium, total	1,100 U	1,300 U	1,100 U	1,100 U
Units	(ug/kg dw)	(ug/kg dw)	(ug/kg dw)	(ug/kg dw)

Parameter	A21268-8 609A-1001-PE03	A21268-9 609A-1001-PE04	A21268-10 609A-1001-PE05	A21268-25 609A-1001-WB01
	Sample Designation			
Arsenic, total	5,600	4,900	22,000	10 U
Cadmium, total	1,100 U	1,100 U	1,300 U	10 U
Units	(ug/kg dw)	(ug/kg dw)	(ug/kg dw)	(ug/l)

AnalytiKEM

VIII. Analytical Results (Cont'd)

EP Toxicity Procedures

Sample Designation

Parameter	Method Blank	A21268-22 609A-1001-WC01	A21268-23 609A-0401-WC01	A21268-24 609A-1000-WC01	EP Toxicity Limits
Arsenic	500 U	500 U	500 U	500 U	5,000
Barium	2,000 U	740 J	520 J	540 J	100,000
Cadmium	100 U	100 U	100 U	100 U	1,000
Chromium	500 U	500 U	500 U	500 U	5,000
Lead	500 U	500 U	500 U	500 U	5,000
Mercury	20 U	20 U	20 U	20 U	200
Selenium	300 U	300 U	300 U	300 U	1,000
Silver	500 U	500 U	500 U	500 U	5,000
Copper	500 U	500 U	500 U	500 U	--
Zinc	200 U	440	290	390	--
Units	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)

ATTACHMENT 4

AnalytiKEM An American NuKEM Company

AnalytiKEM Inc.
28 Springdale Road
Cherry Hill, NJ 08003
609/751-1122
215/923-2068

February 6, 1990

Environ
210 Carnegie Center
Princeton, New Jersey 08540

Attention: William Kraft

Reference: Cadmium Analysis, Polychrome Project
Test Report No. 17790 November 18, 1988
Test Report No. 20770 December 12, 1989

Dear Mr. Kraft:

This letter is in response to the inquiries concerning the Cadmium results for the project stated above. You recently brought to our attention, that our results were not in agreement with historical results obtained previously for this project. This letter will serve to define the technical issue and present some conclusions.

The original analysis for Cadmium was performed by ICP utilizing EPA SW-846 second edition method 6010. Under this methodology, the suggested wavelength for Cadmium analysis is 226.502 nm, and 214.438 nm is suggested by the instrument manufacturer. It is noted in these protocols that Iron present at a sufficient concentration may cause interference effects at these wavelengths. Iron analysis was not requested for these samples; therefore, it could not be determined if Iron was causing the interference.

To investigate the possibility of Iron interference at these wavelengths, AnalytiKEM conducted a series of tests in March of 1989 to assist in determining the problem. Samples of similar matrix which were known to contain Iron at a sufficient concentration to interfere with Cadmium analysis were chosen and analyzed. It was found that Iron will not interfere with the tertiary Cadmium line at 228.81 nm by ICP. As an example we have enclosed an ICP scan printout for one of the samples used in the study. The Iron interference can be clearly seen on these scans. A table of analyte interferences is also included.

As a result of this study, the tertiary wavelength (228.81 nm) has been added to our S.O.P. for the analysis of Cadmium. Effective at that time, if results obtained by ICP for the primary and tertiary wavelengths are in agreement, the results are reported. If the results do not compare, Cadmium will be analyzed by either Graphite Furnace or Flame Atomic Absorption and these results are reported.

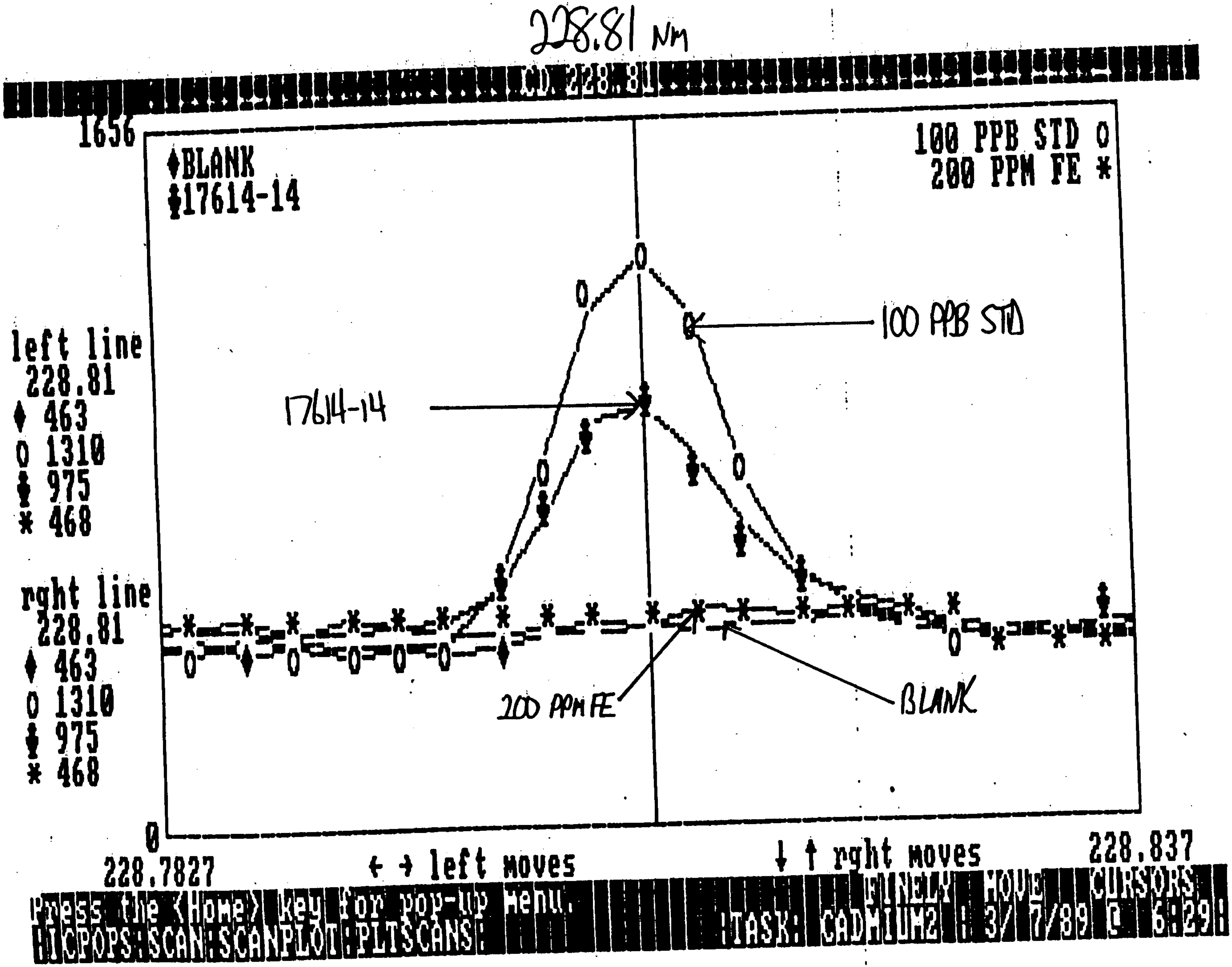
We apologize for any inconvenience this may have caused you. If you have any further questions on this issue, please contact me at any time.

Very truly yours,

AnalytiKEM, Inc.

Gregory Pruna
Metals Manager

GP/trj
cc: William Fithian
Edward Palmer
David Kliauga
Anne Cicero


228.81 NM
1656
♦BLANK
♦17614-14
100 PPB STD 0
200 PPM FE *
100 PPB STD
17614-14
200 PPM FE
BLANK
left line
228.81
♦ 463
0 1310
♦ 975
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rght line
228.81
♦ 463
0 1310
♦ 975
* 468
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228.837
FINELY MOVE CURSORS
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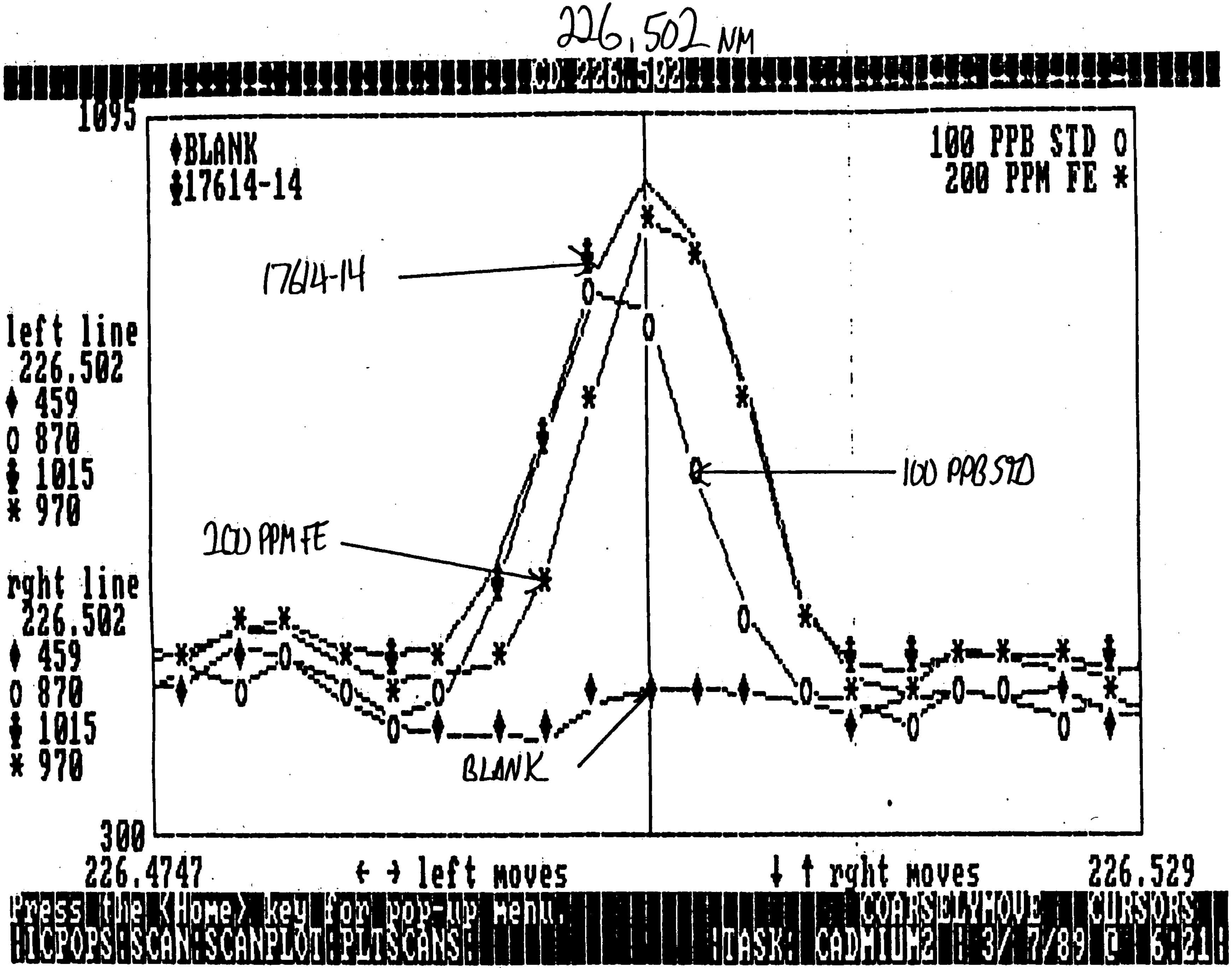
HICPOPS SCAN SCANPLOT PLTSCANS
TASK: CADMIUM2 3/ 7/89



226.502 NM
CD 226.502
1095
BLANK
17614-14
100 PPB STD 0
200 PPM FE *
17614-14
left line
226.502
459
0 870
1015
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100 PPB STD
200 PPM FE
rght line
226.502
459
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1015
* 970
BLANK
300
226.4747
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226.529
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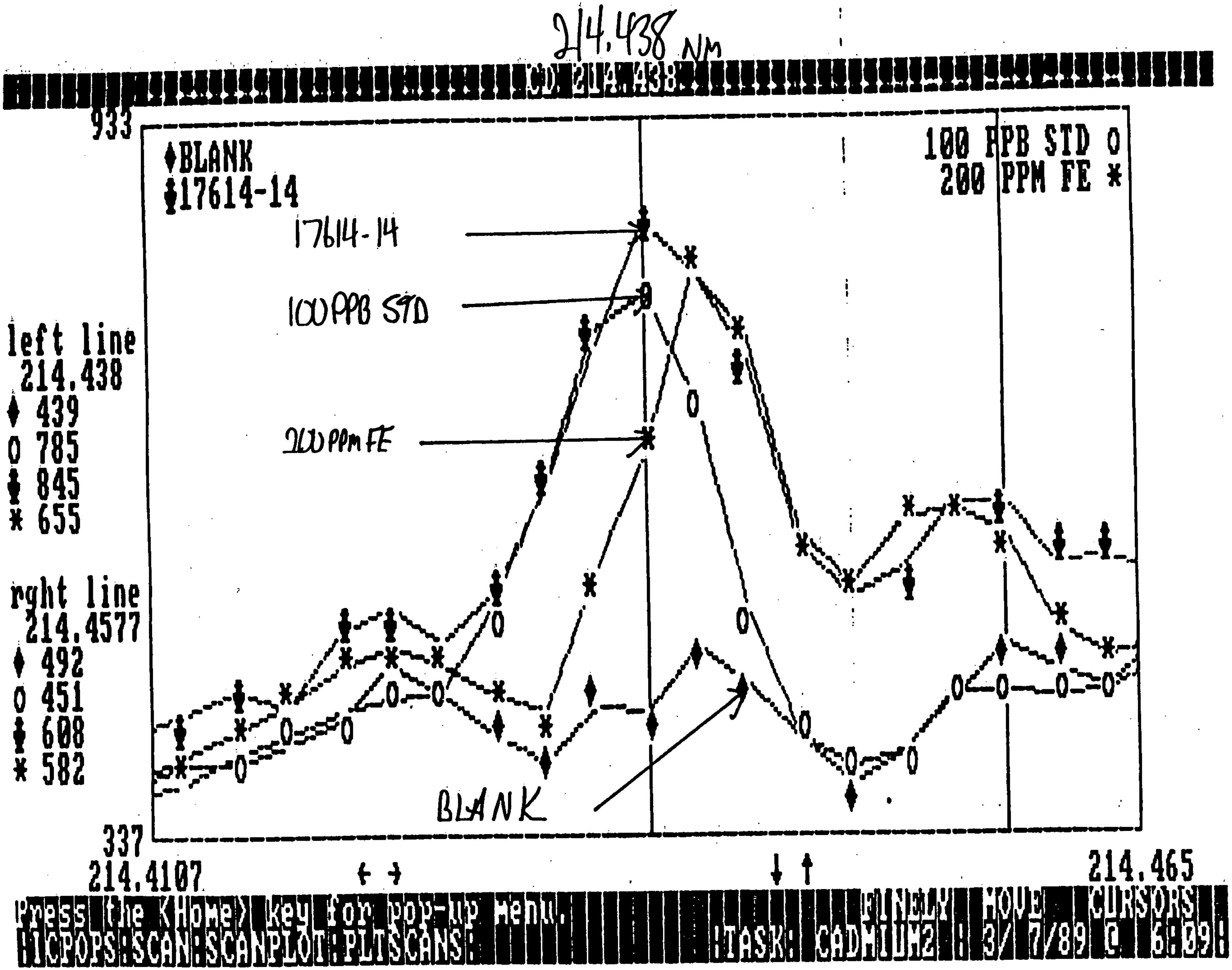
HICPOPS SCAN SCANPLOT PLTSCANS
TASK: CADMIUM2 3/ 7/89 5:21


214.438 NM
214.438
933
BLANK
17614-14
100 PPB STD 0
200 PPM FE *
17614-14
100PPB STD
200PPM FE
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439
0 785
845
* 655
rght line
214.4577
492
0 451
608
* 582
337
214.4107
214.465
Press the <Home> key for pop-up menu.
FINELY MOVE CURSORS
ICPOPS:SCAN:SCANPLOT:PLTSCANS:
TASK: CADMIUM2 3/ 7/89

TABLE 2. ANALYTE CONCENTRATION EQUIVALENTS ARISING FROM INTERFERENCE AT THE 100-mg/L LEVEL

		Interferent[a,b]									
Analyte	Wavelength (nm)	Al	Ca	Cr	Cu	Fe	Mg	Mn	Ni	Tl	V
Aluminum	308.215	—	—	—	—	—	—	0.21	—	—	1.4
Antimony	206.833	0.47	—	2.9	—	0.08	—	—	—	0.25	0.45
Arsenic	193.696	1.3	—	0.44	—	—	—	—	—	—	1.1
Barium	455.403	—	—	—	—	—	—	—	—	—	—
Beryllium	313.042	—	—	—	—	—	—	—	—	0.04	0.05
Boron	249.773	0.04	—	—	—	0.32	—	—	—	—	—
Cadmium	226.502	—	—	—	—	0.03	—	—	0.02	—	—
Calcium	317.933	—	—	0.08	—	0.01	0.01	0.04	—	0.03	0.03
Chromium	267.716	—	—	—	—	0.003	—	0.04	—	—	0.04
Cobalt	228.616	—	—	0.03	—	0.005	—	—	0.03	0.15	—
Copper	324.754	—	—	—	—	0.003	—	—	—	0.05	0.02
Iron	259.940	—	—	—	—	—	—	0.12	—	—	—
Lead	220.353	0.17	—	—	—	—	—	—	—	—	—
Magnesium	279.079	—	0.02	0.11	—	0.13	—	0.25	—	0.07	0.12
Manganese	257.610	0.005	—	0.01	—	0.002	0.002	—	—	—	—
Molybdenum	202.030	0.05	—	—	—	0.03	—	—	—	—	—
Nickel	231.604	—	—	—	—	—	—	—	—	—	—
Selenium	196.026	0.23	—	—	—	0.09	—	—	—	—	—
Silicon	288.158	—	—	0.07	—	—	—	—	—	—	0.01
Sodium	588.995	—	—	—	—	—	—	—	—	0.08	—
Thallium	190.864	0.30	—	—	—	—	—	—	—	—	—
Vanadium	292.402	—	—	0.05	—	0.005	—	—	—	0.02	—
Zinc	213.856	—	—	—	0.14	—	—	—	0.29	—	—

[a] Dashes indicate that no interference was observed even when interferents were introduced at the following levels:

Al - 1000 mg/L,	Mg - 1000 mg/L,
Ca - 1000 mg/L,	Mn - 200 mg/L,
Cr - 200 mg/L,	Tl - 200 mg/L,
Cu - 200 mg/L	V - 200 mg/L
Fe - 1000 mg/L	

[b] The figures recorded as analyte concentrations are not the actual observed concentrations; to obtain those figures, add the listed concentration to the interferent figure.

Let's protect our earth

State of New Jersey
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF HAZARDOUS WASTE MANAGEMENT
Lance R. Miller, Acting Director
CN 028
Trenton, N.J. 08625-0028
(609) 633-7141
Fax # (609) 633-1454

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
Carol Surgens
Lowenstein, Sandler, Brochin, Kohl
65 Livingston Avenue
Roseland, NJ 07068

FEB 22 1990

Dear Ms. Surgens:

RE: Administrative Consent Order ECRA Case #86122,
In the Matter of Polychrome Corporation ("Polychrome ACO")

This is in response to your letter dated February 9, 1990 requesting an extension for submission of the Soil and Ground Water Results Report with an appropriate proposal and review fee pursuant to Paragraph 10 of the Polychrome ACO. An extension shall be granted for 30 days from receipt of this letter.

The Department is concerned over the length of time Polychrome has taken to work through the ECRA Process. Please be advised that it is imperative that Polychrome and its agents anticipate the need to formalize contracts, obtain permits, and so forth in order to adhere to Department time frames. Future requests for extensions of this nature will not be granted.

This letter is only an extension and does not relieve Polychrome of any obligations or responsibilities set forth in the ACO.

If Polychrome fails to submit the above referenced information on or before the indicated submission date, NJDEP reserves the right to implement full enforcement measures pursuant to the Polychrome ACO, including the right to assess penalties from the original due date established under the Polychrome ACO.

Please contact Sharon S. Bruder at (609) 633-7141 if you have any further questions on this matter.

Sincerely,

Karl J. Delaney, Assistant Director
Industrial Site Evaluation Element

SSB/dg
c: Tina O'Brien, BEAC
William Kraft, Environ

ENVIRON

February 9, 1990

VIA TELECOPIER

Ms. Sharon Bruder
Industrial Site Evaluation Element
Division of Hazardous Waste Management
New Jersey Department of Environmental Protection
401 East State Street, Fifth Floor
Trenton, NJ 08625

Re: Polychrome Corporation
Yardville, Mercer County
ECRA Case No. 86122

Dear Sharon:

The purpose of this letter is (1) to inform you of the progress made to date in executing the NJDEP-approved Phase II sampling program at this site; and (2) to formally request an extension for submitting the results report. As we discussed, the need for an extension of time is in large part due to difficulties in scheduling well installation with drilling contractors.

I. PROGRESS IN EXECUTING SAMPLING PROGRAM

Field operations began on December 4, 1989 and all proposed sampling was completed by January 4, 1990. The specific field tasks performed include the following:

- Installation and development of three additional shallow monitoring wells.
- Installation of four soil borings in the vicinity of AEC 1 to delineate extent of soil contamination.
- Completion of six hand auger borings in wooded portion of property.
- Sampling of monitoring wells for TDS, TPHCs, BN+15 and VOC+15.

In addition to the field investigations, a one-half mile radius well search was initiated by ENVIRON and included a computer search of both water withdrawal points and well permits.

ENVIRON has recieved all of the analytical data from the sampling program, and is in process of reviewing and verifying these data. In addition, a survey of the monitoring well locations and elevations has been completed.

II. PROPOSED TIMETABLE FOR COMPLETION

The remaining tasks to complete execution of the sampling program are:

1) Excavation and disposal of soils from AECs 1, 2, 4, 10 and 11.
2) Completion of monitoring well certification forms;
3) Compilation and verification of analytical results;
4) Interpretation of hydrogeologic and chemical data;
5) Completion of a report presenting and interpreting the results of the sampling program; and

The estimated time required to complete these tasks is as follows:

Date	Tasks
February 14	Complete excavations and collect post-excavation and waste classification samples.
February 23	Complete interpretations of hydrogeologic and chemical data. Determine nature and extent of any contamination detected. Prepare summary figures presenting these data.
March 2	Receive post-excavation and waste classification results. Submit material profile information to disposal facility.
March 20	Tranportation of stockpiled and drummed soil to disposal facility.
March 20	Complete a report presenting the results of the additional delineation sampling and cleanup activities.
March 27	Complete internal and external review of the report and submit to NJDEP.

We are continuing to proceed with the completion of the sampling program at this time. We believe that an March 27, 1990 due date for submission of the results report is appropriate and realistic given the scope of sampling, laboratory deliverable dates and the time necessary to complete cleanup activities. However, ENVIRON notes that the schedule for disposal arrangements may be longer than anticipated, lengthening the time required to complete the cleanup activities. ENVIRON will notify you if delays are encountered. Please call if you have any questions about the proposed schedule for completion of this work.

Sincerely,

Bill

William D. Kraft
Staff Geologist

WDK:rdp
2040f

cc: Barbara Cane, Esq.
Anthony Reitano, Esq.

ENVIRON

November 27, 1989

RECEIVED
NOV 30 1 02 PM '89

Ms. Sharon Bruder
Industrial Site Evaluation Element
New Jersey Department of
Environmental Protection
401 East State Street, 5th floor
Trenton, NJ 08625

Re: Polychrome Corporation
Yardville, Mercer County
ECRA Case No. 86122

Dear Sharon:

This is to confirm our telephone conversation of November 22 at which time I informed you that Environmental Drilling, Inc. (EDI), the drilling contractor scheduled to install the monitoring wells at the above referenced facility, is once again unable to maintain its schedule. This delay is entirely the responsibility of EDI and is beyond Polychrome's control. As EDI could not provide a revised date, ENVIRON will contact other drilling firms to schedule the field program and will notify you of that schedule. Please contact me if you have any questions about the sampling program.

Sincerely,

Bill

William D. Kraft
Staff Geologist

WDK:bk
1991f

cc: Barbara Cane, Esq.
Carol Surgens, Esq.

RECEIVED
NOV 15 12 35 PM '89

ENVIRON

November 3, 1989

Ms. Sharon Bruder
Industrial Site Evaluation Element
New Jersey Department of
Environmental Protection
401 East State Street, 5th floor
Trenton, NJ 08625

Re: Polychrome Corporation
Yardville, Mercer County
ECRA Case No. 86122

Dear Ms. Bruder:

Polychrome has tentatively scheduled implementation of the Phase II sampling program at the above-referenced facility to begin on November 20. This assumes that Environmental Drilling Inc. completes its other projects according to current schedules. I will inform you if there is any change in this schedule.

Sincerely,

William D. Kraft

William D. Kraft
Staff Geologist

WDK:bk
1979f

cc: Barbara Cane, Esq.
Carol Surgens, Esq.

CN 028
Trenton, N.J. 08625-0028

(609)633-7141

Let's protect our earth

State of New Jersey
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF HAZARDOUS WASTE MANAGEMENT

Michele M. Putnam
Deputy Director
Hazardous Waste Operations

John J. Trela, Ph.D., Director

Lance R. Miller
Deputy Director
Responsible Party Remedial Action

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
Carol Surgens, Esq.
Lowenstein, Sandler, Brochin, Kohl
65 Livingston Avenue
Roseland, NJ 07068

OCT 12 1989

Dear Ms. Surgens:

Re: Polychrome Corp. due 2/12/89
Hamilton Twp, Mercer County
ECRA Case #86122
Phase I Sampling Plan Dated: September 1988,
Addendum to the Phase I Sampling Plan Dated: January 1989 and the
Letter Dated September 11, 1989 from Ms. Carol Surgens and
Environ on Behalf of Polychrome Corp.

Pursuant to the authority vested in the Commissioner of the New Jersey Department of Environmental Protection (NJDEP) by the Environmental Cleanup Responsibility Act (ECRA, N.J.S.A. 13:1K-6 et seq.) and delegated to the Chief of the Bureau of Environmental Evaluation and Cleanup Responsibility Assessment pursuant to N.J.S.A. 13:1B-4, the referenced Sampling Plan is hereby approved as conditioned herein:

Part I: Soil Modifications

A. Polychrome Corp. shall further delineate the petroleum hydrocarbon (PHC) and cadmium (Cd) contamination found in the dumpster area (AEC1) as proposed. Remediation shall be required in this area.

B. The excavation proposed for the northern edge of the parking lot (AEC2) is acceptable. However, sidewall samples shall be collected and analyzed for volatile organics plus an additional fifteen peaks (VO+15) and base neutrals plus an additional fifteen peaks (BN+15).

C. Additional delineation for elevated levels of Cadmium (Cd) and Arsenic (As) are not required in the area of the railroad tracks (AEC 5), provided levels present at the soil surface (0-6") have been documented.

D. Polychrome Corp. shall excavate the contaminated soil found in the trench (AEC 10) to remove the elevated levels of PHC, polychlorinated biphenyls (PCB), VO's, Cd, As and phenols. Post-excavation sampling shall be conducted to verify residual levels. Delineation of the above referenced contaminants is not required since soil removal is necessary in this area and thus a decrease in elevated levels is expected.

E. Polychrome Corp. shall conduct further delineation in the wooded areas (AECs 7,15,&16). If Polychrome Corp. contends that similar levels of contaminants are found throughout this area, then soil samples to verify this assumption shall be provided to the Department. The proposed background sampling for Cd is acceptable. However, proposed BG01 shall be relocated northeast of proposed BG02. The Sampling depths shall be at the surface (0-6") interval and at 3'. Sampling at the 1.5' interval is not required.

F. Polychrome Corp. shall submit before and after photo documentation and details of the repairs made to the asbestos pipe insulation in the boiler. In addition, the work performed in these areas shall conform to the following:

i. Accepted Engineering Practices.
ii. Support A&B of 40 CFR., Part 6., National Emission Standards for Hazardous Air Pollution.
iii. N.J.A.C. 7:26 Non-hazardous Waste Regulation.

G. Polychrome Corp. shall provide the details of the investigation which verified the absence of the "existing drain and drainage pit" in AEC 5 (identified on the attached map).

Part II: Hydrogeology

The groundwater conditions of the Sampling Plan Approval letter dated June 3, 1988 remain requirements by the Department as per the New Jersey Pollutant Discharge Elimination System (NJPDES) Discharge to Ground Water (DGW) N.J.A.C. 7:14A-6.1 and in addition to the following reasons.

Historically, a large quantity of machine waste oil was dumped along the railroad tracks. An estimated 500 gallons per year of waste oil was deposited along the railroad tracks between 1961 and 1965. Approximately 18" of railroad track was excavated in 1965. From 1965 to 1973 approximately 50 gallons of waste oil per year had been discharged to the track bed via a floor drainage trench. The oil soaked ballast was replaced in 1973, however, soil remediation was not completed, leaving a tarry residue in place. Due to the large quantities of waste oil deposited over this 13 year period, the removal of contaminated gravel on two occasions, the documented contamination present at depth, the shallow depth to groundwater and the sandy nature of the soil previously documented at the site, a groundwater investigation remains a requirement by the Department conditioned as follows:

A. A minimum of two wells shall be installed downgradient of the railroad tracks to monitor the potential impacts to ground water quality.

B. One well shall be located upgradient of all areas of concern to monitor the quality of groundwater flowing onto the site and to determine ground water flow direction.

C. The above requested monitoring wells shall be permitted, constructed, and surveyed in accordance with the Department's specifications for unconsolidated monitoring wells. Sample analysis shall include pH, PHC TDS, BN+15, and VO+15.

D. Polychrome shall obtain a New Jersey Pollutant Discharge Elimination System Discharge to Ground Water (NJPDES DGW) Permit for the past discharges of waste machine oil to the ground as per N.J.A.C. 7:14A-6.1.

E. All underground storage tanks including the excavated fuel oil tank shall be registered with the Bureau of Underground Storage Tanks (BUST). Registration forms can be obtained by calling 1-800-722-TANK.

F. A well search shall be submitted to the Department identifying all wells including private, residential, commercial and industrial, within a half-mile radius of the site. The state, county and local offices shall be contacted to obtain this information. All wells shall be located and identified on a site map.

Part III. ECRA Standards for Data Requirements, Presentation and Proposals

A. Data Requirements

The following information shall be included with the results of sampling.

1. Logs for all soil borings and wells.

2. Soil profile logs for all excavations.

3. Monitoring Well Certification Forms: Form A (As-Built Certification) and Form B (Location Certification) must be completed for each monitoring well installed. Form A must be submitted with the results of sampling. Because additional wells are sometimes required to complete a hydrogeologic investigation, Form B may be submitted after completion of the installation of all required ground water monitoring wells, unless required prior to that time by the Department. As built diagrams of all wells shall be included with Form A.

4. A scaled site map of all well and soil boring locations.

5. A minimum of two (2) ground water contour maps, including depth to ground water and reference point elevation, with depth to water readings taken at least thirty (30) days apart. If applicable, depth to water readings taken prior to purging shall be used for contouring purposes. Any corrections made to the static water level due to the presence of free product must be reported, along with the thickness of the product layer.

6. Ground water samples shall be collected a minimum of two (2) weeks following development of the wells.

7. At a minimum, the following purge information shall be provided along with the analytical results: date and time of purge, depth

to water before purging, purge method, estimated volume of purged water, depth to water after purging, date and time of sampling, depth to water before sampling, and sampling method.

8. Provide in a tabular format the results of sampling. Include the sample number, location, interval and depth of sample, sample matrix, and the analytical methods used. The enclosed summary format sheets are provided as guidance for summarizing data.

9. A site map which lists the concentrations of all significant contamination found (above ECRA action levels) at all sampling locations. The labelling of data should be keyed to facilitate interpretation, especially at locations where more than one type of contaminant is found. The use of contaminant isopleth maps is also encouraged.

B. Data/Results Presentation

1. Because of case management workloads and volumes of data to be reviewed and processed, the above noted formatting requirements are essential to insure complete and timely review of the submittal.

2. Tier II deliverables should be identified and separated from the submittals, discussion, conclusions and data summary sheets. The enclosed Laboratory Deliverables checklist should be completed and returned with the Tier II deliverables.

3. All submittals of text/data shall be forwarded in triplicate and shall be properly paginated, bear a table of contents and be bound (1 copy may be unbound for filing purposes).

4. Failure to organize submittal information as outlined above can constitute reason to return the submittal to the consultant for correction and resubmission, thus causing further delay in case processing.

5. Failure to address these conditions and provide documentation where required shall constitute non-compliance with ECRA, no final approvals or case closure will occur until these issues are resolved.

C. The Cleanup Plan Proposal

During the course of the implementation of the sampling and the generation and evaluation of data, the consultant will be considering the development of a Cleanup Plan. To insure a complete and timely review of the submittal, the Cleanup Plan should be a stand alone, self-supporting document. As a guide to this process, the following elements should be included in the formation of the plan.

1. Introduction

2. Table of Contents

3. Summary of Environmental Concerns. Include the results of previous sampling.

4. The proposed remedial actions. Include the evaluation of any alternative remedial actions if appropriate.

5. Cleanup levels to be achieved. Be specific with regard to media and parameters.

6. A Work Plan must detail the specific activities that will be used to complete the proposed cleanup objectives.

7. A post-remediation sampling and monitoring plan.

8. A specific time table for implementation of the Cleanup Plan which includes milestones in the project.

9. Progress reports, dependant on the duration of the cleanup.

10. Estimate costs for cleanup:

    a. capital costs;
    b. operation and maintenance costs;
    c. monitoring system costs;
    d. laboratory costs;
    e. engineering, legal, and administrative costs; and
    f. contingency costs.

D. Please be advised that, according to N.J.A.C. 7:26B-4.3, sampling results shall be accompanied by:

a. a proposed Negative Declaration; or
b. a proposed Cleanup Plan; or
c. a revised Sampling Plan to further delineate the extent and degree of contamination on or from the industrial establishment.

Failure to submit the appropriate accompanying document as described above will constitute reason to return the submittal to the consultant for correction and resubmission, thus causing further delay in case processing.

E. Please be advised that the results of sampling shall be accompanied by the appropriate fee as required by N.J.A.C. 7:26B-1.10. The enclosed Fee Submittal Form is provided for guidance to determine the fees required; this form should be completed and returned with the submittal package.

A Cleanup Plan shall be accompanied by a fee based on the cost of cleanup.

Submission of analytical data shall be assessed a $1,000.00 review fee.

Part IV <u>General</u>

1. Polychrome Corp shall accomplish this investigation and any further analytical investigations by the methods outlined in this Sampling Plan. If any change in methods outlined in this sampling plan is necessary or if any delays are encountered, Polychrome Corp shall inform BEECRA in writing prior to implementation.

2. Polychrome Corp shall submit summarized analytical results in tabular form. Polychrome Corp shall also submit with the analytical data all documents associated with the sampling and testing, including but not limited to lab sheets, chain of custody, results of blank analyses, lab chronicles, summary of analytical instrument tuning, and analytical methods used.

3. Polychrome ~~Corp shall~~ submit the results in triplicate within one hundred twenty (120) days of receipt of this approval.

4. Polychrome Corp shall notify NJDEP at least five (5) business days prior to implementation of sampling.

5. If contamination is determined to exist above a level found acceptable by NJDEP, Polychrome Corp shall prepare and submit a Cleanup Plan developed pursuant to N.J.A.C. 7:26B-5.3 to address said contamination. If the data from implementation of the approved Sampling Plan indicates the presence of contamination, but is not sufficient to define the full horizontal and vertical extent, then such areal definition shall be proposed as a Sampling Plan Addendum in a form which meets the criteria of N.J.A.C. 7:26B-3.2(c)11. The horizontal and vertical extent of contamination shall be determined before an approvable Cleanup Plan can be developed.

This document was prepared by the Case Manager, Sharon Bruder. If you have any questions, please contact the Case Manager at (609) 633-7141.

Very truly yours,

John Dof...

Kenneth T. Hart, Chief
Bureau of Environmental Evaluation
and Cleanup Responsibility Assessment

SSB/cam
enclosure
cc: William Kraft, Environ
Swati Topin, Ph. D., NJDEP/BEERA
Derek Carano, NJDEP/BGWDC

LOWENSTEIN, SANDLER, KOHL, FISHER & BOYLAN

A PROFESSIONAL CORPORATION
COUNSELLORS AT LAW
65 LIVINGSTON AVENUE
ROSELAND, NEW JERSEY
07068-1791
TELEPHONE (201) 992-8700
FACSIMILE (201) 992-5820

SOMERVILLE OFFICE
TELEPHONE (201) 526-3300

September 11, 1989

FEDERAL EXPRESS

Ms. Sharon Bruder, Case Manager
Industrial Site Evaluation Element
New Jersey Department of
Environmental Protection
401 East State Street, 5th Floor
Trenton, New Jersey 08625

Re: **Polychrome Corp., Hamilton Township, Mercer County; ECRA Case No. 86122**

Dear Sharon:

Enclosed please find a response we are submitting on behalf of Polychrome Corp. to the draft letter from your office commenting on the additional sampling proposed in the above-referenced matter. As you will see, the enclosures clarify certain information regarding sampling as you have requested, discuss areas in which there is still disagreement and indicate the areas in which the company will incorporate the State's comments and requests into the sampling proposed. Additionally, we are providing maps with proposed locations for additional soil sampling and copies of various tables and quality assurance/quality control documents that have been referenced in both the State's letter and our responses.

091189ATYCAS34

Once you have had an oportunity to review this and discuss our comments with other members of the State's technical team, please give me a call to discuss the final resolution of these issues. I hope to be hearing from you shortly.

Very truly yours,

Carol Surgens

Carol A. Surgens

CAS:rdf

Enclosures

cc: Barbara Kane, Esq. (w/enc.)
Mr. William Kraft (w/enc.)

Sharon —
By the time you read this, I'll be in Hawaii — :)
Wish I knew more about this case to call her up and discuss it.

Part I. Soil Modifications

A. NJDEP Comment:

Polychrome Corp. shall further delineate the petroleum hydrocarbon (PHC) and cadmium (Cd) contamination found in the dumpster area (AEC 1) as proposed. Remediation shall be required in this area.

ENVIRON Response:

Delineation sampling for PHC and Cd will be conducted in AEC 1 **as proposed**. Remediation will be conducted subsequently, as needed.

B. NJDEP Comment:

The excavation proposed for the northern edge of the parking lot (AEC 2) is acceptable. However, sidewall samples shall be collected and analyzed for volatile organics plus an additional fifteen peaks (VO+15) and base neutrals plus an additional fifteen peaks (BN+15).

ENVIRON Response:

This requirement **will be incorporated** into the sampling program.

C. NJDEP Comment:

Horizontal and **vertical** delineation shall be conducted for the **PHC, Cd and Arsenic** (As) contamination found above ECRA "action levels" in the area of the railroad tracks and siding (AEC 5).

ENVIRON Response:

Soil sampling previously conducted in **AEC 5** has delineated fully the vertical extent of PHC contamination, documenting that it is ~~only~~ present ~~above the ECRA action~~ level only at the surface. The PHC levels at this restricted surface location were minimally above the action level, and **thus no** ~~horizontal delineation~~ **is needed**. Conversely, prior sampling for ~~Cd and~~ **As was confined to the surface**, per NJDEP requirements. Thus, additional samples for these metals are appropriate to determine the lateral and vertical extent of contamination. **Polychrome proposes to install three soil borings proximate** to Boring 503, ~~where the only elevated As level was~~ **identified**. Soil samples will be collected from each boring from the soil surface and from six inches above the water table. The locations of the proposed borings are provided on the attached figure. (See Attachment 1). Polychrome is not proposing to delineate the Cd contamination because Polychrome believes elevated Cd values in AEC 5 and at another locations across the site result from activities predating development of the site for industrial use. Sampling is proposed below to support this background argument.

D. NJDEP Comment:

Polychrome Corp. shall remediate the PHC, polychlorinated biphenyls (PCB), VO's, and Cd contamination found in the trench (AEC 10). Concentrations of these contaminants are extremely elevated and the proposal to remediate by filling in the trench with concrete is not acceptable. Vertical and horizontal delineation of Cd and As contamination, which increase with depth shall be completed. **Remediation for Cd, As, PCB's (79 ppm), VO's and PHC's is required in this area.**

ENVIRON Response:

Polychrome will address the upper sample from Boring 1001, which contained 79 ppm of PCBs, 15 ppm of VOCs and levels of PHC's above 100 ppm. Polychrome will install one boring through the trench floor on each side of Boring 1001 to delineate the lateral extent of these contaminants. Two soil samples will be collected from each boring, from the soil surface and the six-inch interval above the water table, and will be analyzed for [redacted] and PHCs.

*why

Polychrome also will [redacted] the area of concern at [redacted] as a "hot spot" of PHC contamination. PCB concentrations Boring 1002 were only minimally above the ECRA action level range for this contaminant. Two delineation borings will be installed proximate to Boring 1002. Two soil samples will be collected from *why the depths described above, and will be analyzed for PHCs. (See Attachment 2).

PCB's
Cd
As

Following review of the analytical data from these four delineation borings, Polychrome will [redacted] * remove/ex of these two "hot spots".

E. NJDEP Comment:

Polychrome Corp. shall submit the sampling data for the [redacted]a (AREA 14). Evaluation of the "no further action" proposal cannot be determined without this information.

ENVIRON Response:

This information, provided in the September 1988 report presenting the Phase I sampling data, will be resubmitted. **See Attachment** 3, pages 25, 26, 40 and 52 of Test Report No. A16918 of September, 1988 report, which are attached hereto for your easy reference. (See Attachment 3). Thus, Polychrome submits **no further action is necessary.**

F. NJDEP Comment:

Polychrome Corp. shall include polycyclic aromatic hydrocarbons (PAH) as well as PHCs in the post excavation sampling analysis in the area of the former underground fuel oil tank (AEC ~~11)~~. 4

ENVIRON Response:

Clarification of the AEC referred to in this item is necessary. AEC 4, not AEC 11, is the former **underground fuel oil tank**; AEC 11 is a discolored area proximate to an aboveground fuel oil tank. If this item refers to AEC 11, Polychrome will include PAHs in a post-excavation sample analysis if requested. However, if Item F refers to AEC 4, **Polychrome will not include PAHs in the** analysis. When the tank was removed in 1986, five post-excavation samples were collected and two were analyzed for BNs. No BNs were detected. The excavated soil was used to backfill the hole. ENVIRON discussed the future removal of this soil with Mr. Michael Metlitz, then the Case Manager. He indicated that as post-excavaton samples had already been anaiyzed for BNs and none had been detected, no additional BN analyses need be performed on soil samples from AEC 4.

G. NJDEP Comment:

Polychrome Corp. shall conduct further delineation in the wooded areas (AECs 7, 15, & 16). If Polychrome Corp. contends that similar levels of contaminants are found throughout this area, then soil samples to verify this assumption shall be provided to the Department.

Wait to do background sampling before [illegible]

ENVIRON Response:

Polychrome proposes to meet the goals of this item by verifying the assumptions regarding background levels. Two hand auger borings will be installed in undisturbed areas in the woodland. The approximate locations of these borings are shown on the attached figure. Samples will be collected at three depths, surface, 1.5 feet, and 3 feet, and analyzed for Cd. Polychrome will evaluate these results before conducting delineation sampling in AECs 7, 15 and 16. (See Attachment 4).

H. NJDEP Comment:

Polychrome Corp. shall submit the tune summary for the BN and Vo fractions for AEC's 6, 7, 15 & 16 - lab report #A.

ENVIRON Response:

This material, submitted with the laboratory data package and sampling addendum in January 1989, will be resubmitted. See, Volume Two, Test Report No. 17790, pages 353 and 384, "Raw QC Data Package" of January 1989 addendum, attached hereto for your easy reference. (See Attachment 5).

I. NJDEP Comment:

Polychrome Corp. shall submit the Chain of Custody for the post excavation samples (PHC) in the underground fuel oil tank area (AEC 4).

ENVIRON Response:

This information requested is attached. (See Attachment 6).

J. NJDEP Comment:

Polychrome corp. shall submit before and after photo documentation and details of the repairs made to the asbestos pipe insulation in the boiler. In addition, the work performed in these areas shall conform to the following:

i. Accepted Engineering Practices.
ii. Support A&B of 40 CFR., Part 6., National Emission Standards for Hazardous air Pollution.
iii. N.J.A.C. 7:26 Non-hazardous Waste Regulation.

ENVIRON Response:

Polychrome will comply with this request.

K. NJDEP Comment:

The enclosed map from the Site Evaluation Submission dated February 14, 1986, Appendix 4 indicates area of environmental concern (AEC) which require additional investigation. The area identified to have received waste oil appears on the map to be concentrated at one end of the railroad tracks adjacent to a paved area. In addition an existing drain is identified on the map and a drainage pit (identified on the map) or long drainage pipe was proposed to be installed. Polychrome shall conduct sampling to delineate any contamination associated with these AEC's or provide verification that these AEC's have been investigated and/or remediated.

ENVIRON Response:

DEP has reviewed the spill history section of the SES but we believe has misinterpreted the description provided for AEC 5. NJDEP notes that a map in the spill history section identified the waste oil spill area as limited to a portion of the railroad siding adjacent to a paved area, namely the terminus of the siding. It should be noted that as there is no scale on this map, relative distances may appear misleading. Boring 504 was installed specifically to address what Polychrome believes to be this area, based on best estimations and only minimal PHC levels were detected at the surface. Thus, Polychrome believes no further spill delineation is necessary.

Second NJDEP appears to have misinterpreted a 1965 engineering proposal for railroad reconstruction and drainage system design as evidence of installation of that system. Environ has carefully investigated this area and searched for both the piping and drainage pit at issue but has found no evidence of either. Furthermore, this issue has been discussed with various NJDEP personnel at the property, all of who have agreed that there is no physical evidence that this proposed drainage system was actually constructed. Most recently, Case Manager Sharon Bruder observed during the June 2, 1989 site inspection that there is no evidence of either the drainage pit or any other subsurface drainage feature. Additionally, the 1965 proposal states that should insufficient drainage be noticed following the excavation of test pits, this system would not be installed. Based on the soil types encountered during drilling in AEC 5, it is unlikely that adequate drainage could be achieved by use of a drainage pit.

details of investigation

Thus, Polychrome proposes no additional action with regard to this area of concern. Polychrome, therefore, maintains that because there is no evidence of this drain and as there are no as-built diagrams of this drainage pit, no further action is appropriate or necessary.

Part II. Hydrogeology

NJDEP Introductory Comments:

The groundwater conditions of the Sampling Plan Approval letter dated June 3, 1988 remain requirements by the Department due to the following reasons.

It has been determined that a much larger quality of machine waste oil was dumped along the railroad tracks than previously suspect. an estimated 500 gallons per year of waste oil was deposited along the railroad tracks between 1961 and 1965. Also, from 1965 to 1973 approximately 50 gallons of waste oil per year had been discharged to the track bed via the floor drainage trench (AEC 10). The oil soaked ballast was replaced in 1973, however soil remediation was not completed, leaving a tarry residue in place. Due to the large quantities of waste oil deposited over this 13 year period, the removal of contaminated gravel on two occasions, the documented contamination present at depth, the shallow depth to groundwater (2-6') and the sandy nature of the soil, a groundwater investigation remains a requirement by the Department conditioned as follows.

ENVIRON Response:

It must be emphasized that Polychrome fully disclosed all the information that it has pertaining to waste oil disposal on the railroad siding by providing NJDEP with the 1986 SES Monsanto documents regarding spill volumes, location and duration in the Initial Notice submitted in February 1986. The NJDEP statements seem to imply that information has been withheld, which is not the case.

ok

NJDEP states that from 1965 to 1973 waste oil was discharged via the floor drainage trench in AEC 10. NJDEP apparently has drawn the conclusion that the drainage trench described in that memo is the same as AEC 10. However, There are no facts supporting this conclusion. In fact, there is no physical evidence indicating any external discharge point of AEC 10.

In 1973, as NJDEP noted, the upper several inches of oily ballast were removed. However, NJDEP does not mention that in 1965, at the end of the heaviest oil dumping period, 18 inches of ballast were removed. However, NJDEP does not mention that in 1965, at the end of the heaviest oil dumping period, 18 inches of ballast and soil were removed. Also, the tarry residue NJDEP mentions, and which is described in the Monsanto memo, was not encountered at any boring in AEC 5. It is proabale that Monsanto personnel observed this residue on the surface of the ballast.

According to NJDEP, there is documented contamination at depth in AEC 5, where depth to ground water is between 2 and 6 feet and the soil is sandy in nature. A review of analytical data for AEC 5 clearly indicates that PHC contamination is confined to the surface. Analyses of soil samples collected at depth reported PHCs at non-detectable concentrations. Second, depth to water in AEC 5 as indicated by sampling depths and boring logs, was between **4.5** and 6 **feet**. Furthermore, at no location at this facility is ground water encountered at less than 4 feet. Last, information provided in the submitted boring logs indicates that all of the soils encountered in AEC 5 were silt, clay or peat. No information was given to suggest the presence of sand layers.

These statements must be clarified to understand Polychrome's position with respect to ground water monitoring in AEC 5.

ok A. NJDEP Comment:

A minimum of two wells shall be installed downgradient of the railroad tracks to monitor the potential impact to ground water quality.

ENVIRON Response:

Polychrome will install two monitoring wells downgradient of AEC 5.

ok B. NJDEP Comment:

One well shall be located upgradient of all areas of concern to monitor the quality of groundwater flowing onto the site and to determine groundwater flow direction.

ENVIRON Response:

Polychrome will install one monitoring well upgradient of all AECs.

ok C. NJDEP Comment:

The above requested monitoring wells shall be permitted, constructed, and surveyed in accordance with the Department's specifications for unconsolidated monitoring wells. Sample analysis shall include pH, PHC TDS, BN+15, and VO+15.

ENVIRON Response:

Polychrome will sample the wells required in Items II.A. and II.B. for pH, TDS, PHC, BN+15 and VOC+15.

D. NJDEP Comment:

Polychrome shall obtain a New Jersey Pollutant Discharge elimination System Discharge to Ground Water (NJPDES DGW) Permit for the past discharges of waste machine oil to the ground.

ENVIRON Response:

Polychrome is neither the owner nor operator at this property, nor were the activities at issue conducted by Polychrome. Therefore, Polychrome submits that for these, as well as other reasons, there is no legal basis to require Polychrome to obtain a NJPDES permit for the past discharges.

E. NJDEP Comment:

All underground storage tanks including the excavated fuel oil tank shall be registered with the bureau of Underground storage tanks (BUST). Registration forms can be obtained by calling 1-800-722-TANK.

ENVIRON Response:

Only one underground tank has been in place at this facility. This tank, a 2,000-gallon fuel oil tank removed in February 1987, was used to store fuel oil to heat a building and water related to the fire protection system. As the tank had a capacity of 2,000 gallons and was used to store heating oil for on-site consumption in a nonresidential building, Polychrome believes registration is not required. N.J.S.A. 58:10A-22 (p) 2.

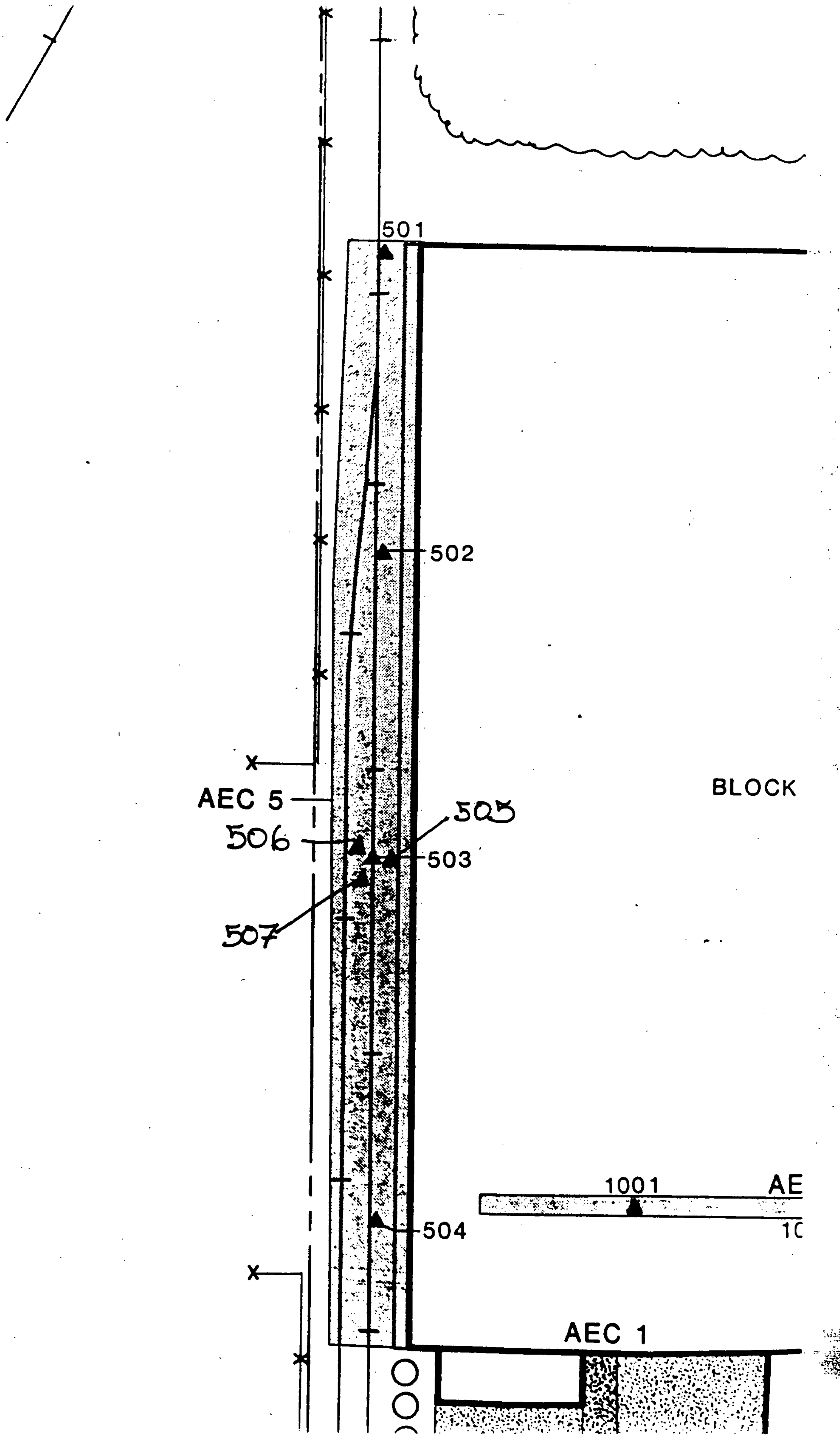
F. NJDEP Comment:

A well search shall be submitted to the Department identifying all wells including private, residential, commercial and industrial, within a half-mile radius of the site. The state, county and local offices shall be contacted to obtain this information. All wells shall be located and identified on a site map

ENVIRON Response:

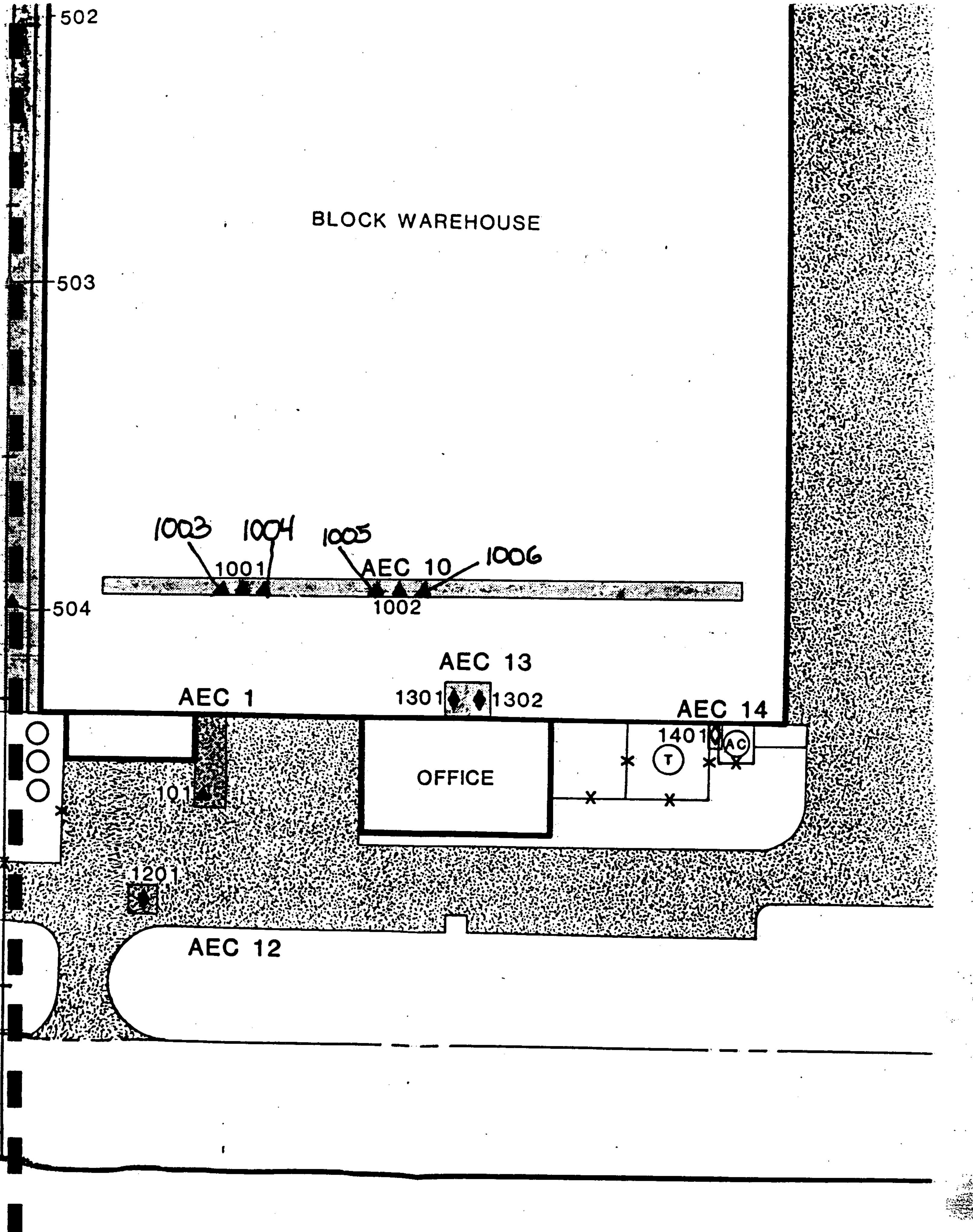
Polychrome will submit a well search identifying the required information and will also prepare a summary figure locating each well.

ATTACHMENT ONE



Attachment 1

ATTACHMENT TWO



Attachment 2

ATTACHMENT THREE

VII. Analytical Results (Cont'd)

Semivolatile Organics-Base Neutrals (Page 1 of 2)

Constituent	Sample Designation: Aqueous Method Blank	Sample Designation: A16918-6 609A-1401-SW01
N-Nitrosodimethylamine	10 U	10 U
Bis(2-chloroethyl) Ether	10 U	10 U
1,3-Dichlorobenzene	10 U	10 U
1,4-Dichlorobenzene	10 U	10 U
1,2-Dichlorobenzene	10 U	10 U
Bis(2-chloroisopropyl) Ether	10 U	10 U
N-Nitrosodipropylamine	10 U	10 U
Hexachloroethane	10 U	10 U
Nitrobenzene	10 U	10 U
Isophorone	10 U	10 U
Bis(2-chloroethoxy)methane	10 U	10 U
1,2,4-Trichlorobenzene	10 U	10 U
Naphthalene	10 U	10 U
Hexachlorobutadiene	10 U	10 U
Hexachlorocyclopentadiene	10 U	10 U
2-Chloronaphthalene	10 U	10 U
Dimethyl Phthalate	10 U	10 U
Acenaphthylene	10 U	10 U
Acenaphthene	10 U	10 U
Units	(ug/l)	(ug/l)

Sampling Data for AEC 14

Attachment 3

VIII. Analvtical Results (Cont'd)

Semivolatile Organics (Page 2 of 2)

Constituent	Method Blank		A16894-6 609A-1401-SW01	
			Sample Designation	
2,4-Dinitrotoluene	10	U	10	U
2,6-Dinitrotoluene	10	U	10	U
Diethyl Phthalate	10	U	10	U
4-Chlorophenyl Phenyl Ether	10	U	10	U
Fluorene	10	U	10	U
N-Nitrosodiphenylamine	10	U	10	U
4-Bromophenyl Phenyl Ether	10	U	10	U
Hexachlorobenzene	10	U	10	U
Phenanthrene	10	U	0.5	J
Anthracene	10	U	10	U
Dibutyl Phthalate	10	U	10	U
Fluoranthene	10	U	0.8	J
Benzidine	100	U	100	U
Pyrene	10	U	0.6	J
Butylbenzyl Phthalate	10	U	10	U
3,3'-Dichlorobenzidine	20	U	20	U
Benzo(a)anthracene	10	U	10	U
Bis(2-ethylhexyl) Phthalate	10	U	19	
Chrysene	10	U	10	U
Dioctyl Phthalate	10	U	10	U
Benzo(b)fluoranthene	10	U	10	U
Benzo(k)fluoranthene	10	U	10	U
Benzo(a)pyrene	10	U	10	U
Indeno(1,2,3-cd)pyrene	10	U	10	U
Dibenzo(a,h)anthracene	10	U	10	U
Benzo(g,h,i)perylene	10	U	10	U
Units	(ug/l)		(ug/l)	

VIII. Analytical Results (Cont'd)

EPA/NIH/NBS Nontargetted Library Search

AnalytiKEM Designation A16918-6

Client Designation 609A-1401-SW01

CAS Number	Compound Name	Fraction	Scan Number	Estimated Concentration (ug/l)
	Unknown Compound	BNA	293	5.2
	Unknown Compound	BNA	308	10
	Unknown Compound	BNA	320	21
	Unknown Compound	BNA	365	23

AnalytiKEM Designation A16918-7

Client Designation 609A-0901-SB01

CAS Number	Compound Name	Fraction	Scan Number	Estimated Concentration (ug/kg dw)
	None Detected	VOA	--	--
	Unknown Compound	BNA	325	4,000
	Unknown Compound	BNA	369	3,900
	Unknown Compound	BNA	400	310
79-34-5	1,1,2,2-Tetrachloroethane	BNA	493	160
	Unknown Compound	BNA	2,354	290

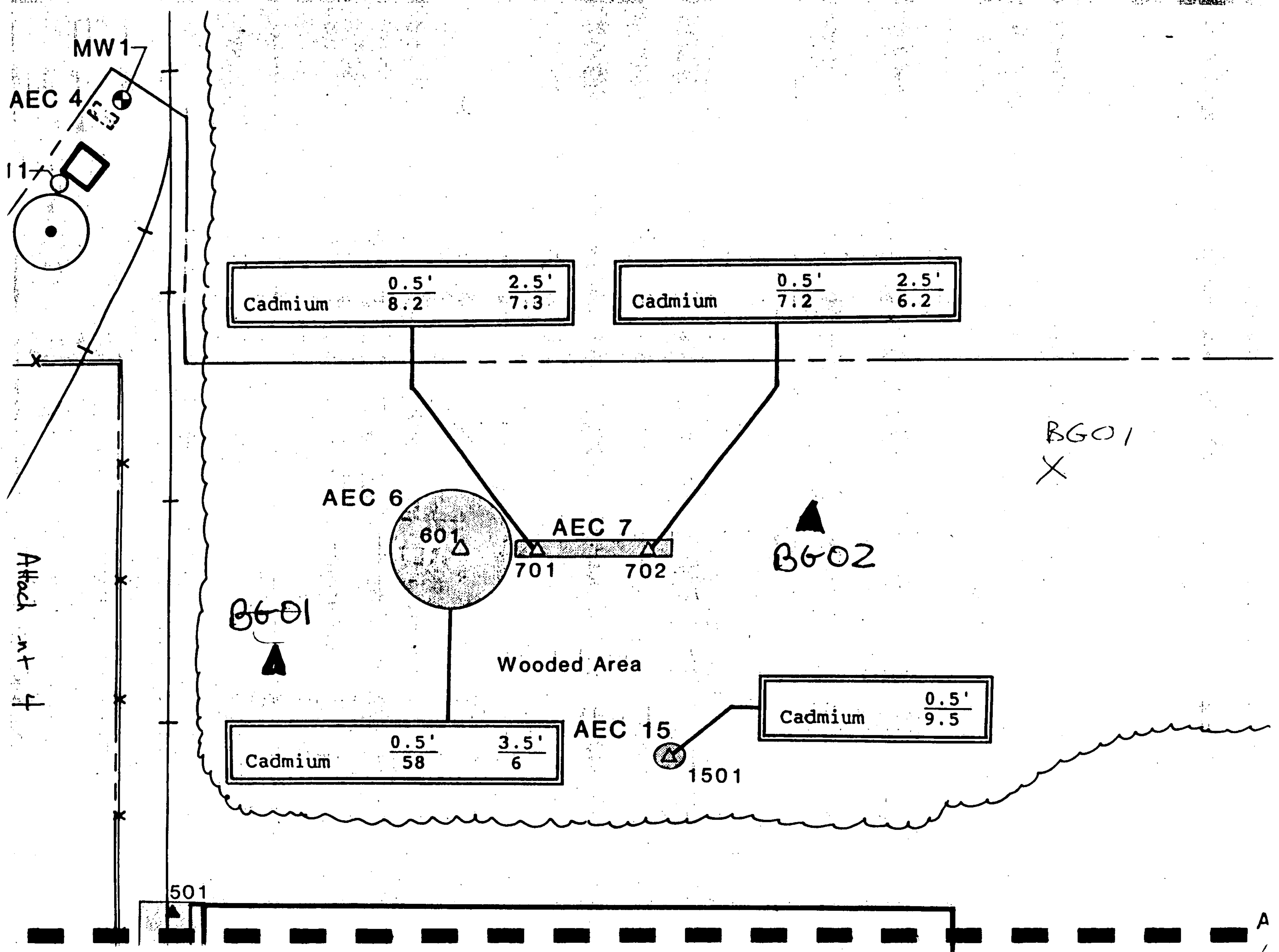
Note: Estimated concentration is calculated against the nearest eluting internal standard.

VIII. Analytical Results (Cont'd)

Polychlorinated Biphenyls

	Sample Designation	
Constituent	Aqueous Method Blank	A16918-6 609A-1401-SW01
Aroclor 1016	10 U	10 U
Aroclor 1221	10 U	10 U
Aroclor 1232	10 U	10 U
Aroclor 1242	10 U	10 U
Aroclor 1248	10 U	10 U
Aroclor 1254	10 U	10 U
Aroclor 1260	10 U	10 U
Units	(ug/1)	(ug/1)

ATTACHMENT FOUR



MW1
AEC 4
Cadmium 0.5' / 8.2 2.5' / 7.3
Cadmium 0.5' / 7.2 2.5' / 6.2
BG01
AEC 6
601
AEC 7
701
702
BG02
~~BG01~~
Wooded Area
Cadmium 0.5' / 58 3.5' / 6
AEC 15
Cadmium 0.5' / 9.5
1501
501

REFERENCE NO. 15

Monsanto

FABRICATED PRODUC___ DIVISION

MONSANTO PLASTIC & RESINS COMPANY
584 Route #130
Trenton, New Jersey 08691
(609) 585-4650

Lester Mount
Plant Manager

State of New Jersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF CANCER AND
TOXIC SUBSTANCES RESEARCH
CN-402, TRENTON, N.J. 08625

THOMAS BURKE, M.P.H.
DIRECTOR

MEMORANDUM

TO: Lester Taube, Office of Economic Development
Department of Labor and Industry
Room 706

FROM: Ed Stevenson, Manager, ES
Industrial Investigations Unit

4-6070

SUBJECT: Inactive Monsanto Facility - Hamilton Twp.

BACKGROUND

Monsanto Plastics and Resins Co. operated its' "Yardville Plant" from 1961 to 1981 on 17 acres in Hamilton Twp. (584 Rt. 130). The facility employed 130 production workers in the manufacture of Plastic Bottles.

OED has requested clarification of the site status regarding possible abandoned environmental contamination.

A review of certain DEP records indicated no outstanding problems or on-site disposal practices.

OBSERVATIONS

An on-site inspection was conducted on 12/11/81 which noted the following (refer to attached sketch):

1. Water Tank/Pump House - There is a 10 foot dia. area of fuel oil saturated soil, due to an apparent overfill, around an underground tank fill-neck.

   This is apparently an unreported spill and requires clean-up. (Responsible party has not been determined).

2. Concrete Drum Storage Pad - There is oil /waste chemical saturation of the unbermed concrete pad and adjacent asphalt and soil. It appears that some contaminated surface soil has been removed, however there has undoubtedly been seepage over the years under this pad. Therefore, this area is still possibly a minor source of groundwater contamination.

3. Bermed Transformer Area - The transformer is not labeled for PCB content.

   This offices' survey records show an inventory of 6,675 lbs. of PCBs at a concentration of 450 ppm (October 3, 1979).

4. Fill/Trash Dumping On-site - There has been some minor fill of plastic pellets placed near a storm drain. This should be removed or paved over as the pellets could wash into the stream.

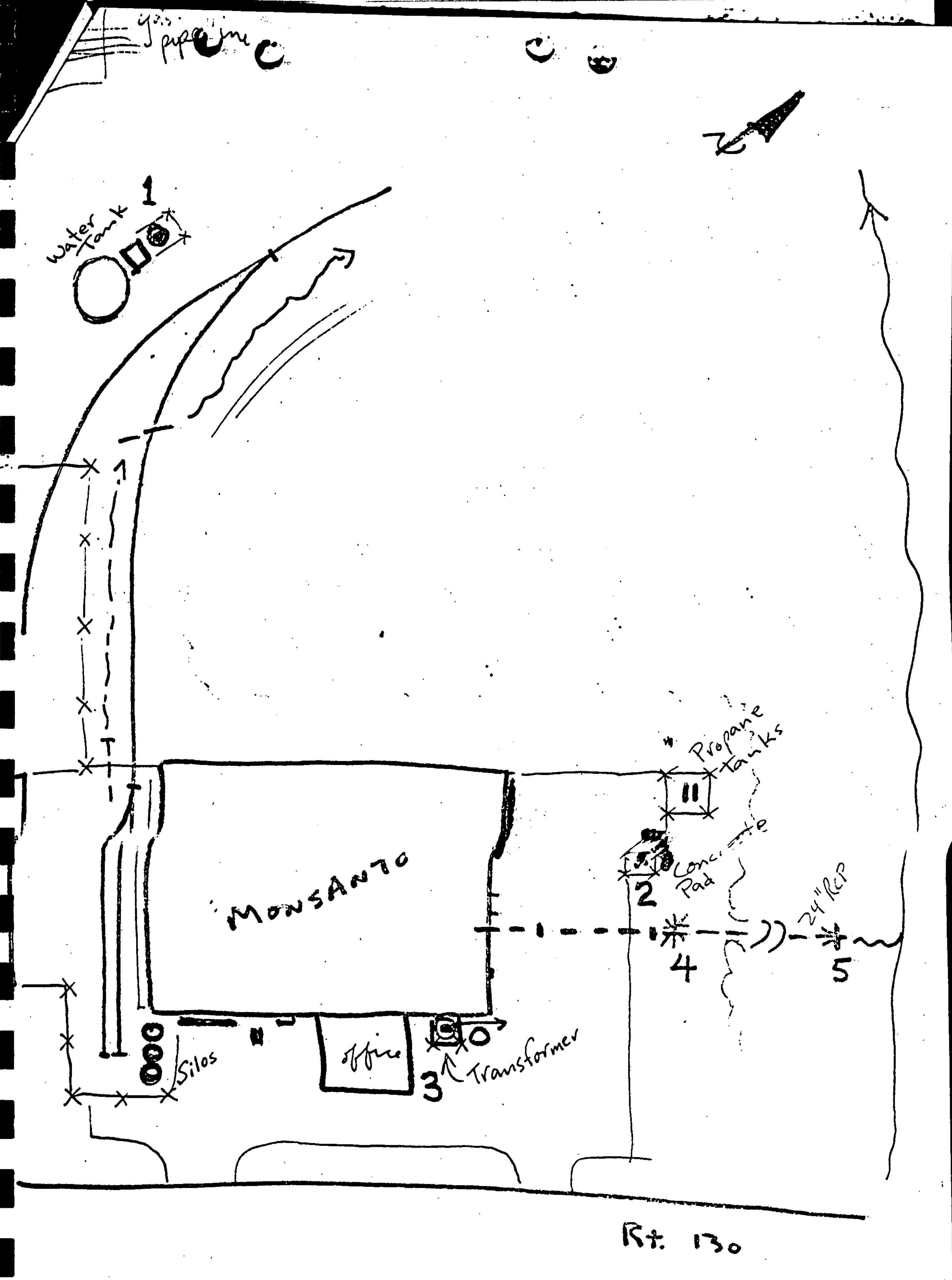
   There is also some trash and garden debris dumped on the property which should be removed.

5. Site Drainage - The majority of drainage from the site is via a 24 in. RCP to Back Creek which borders the site. Sediments at the outfall and creek were visually examined and no obvious contamination was noted.

CONCLUSIONS

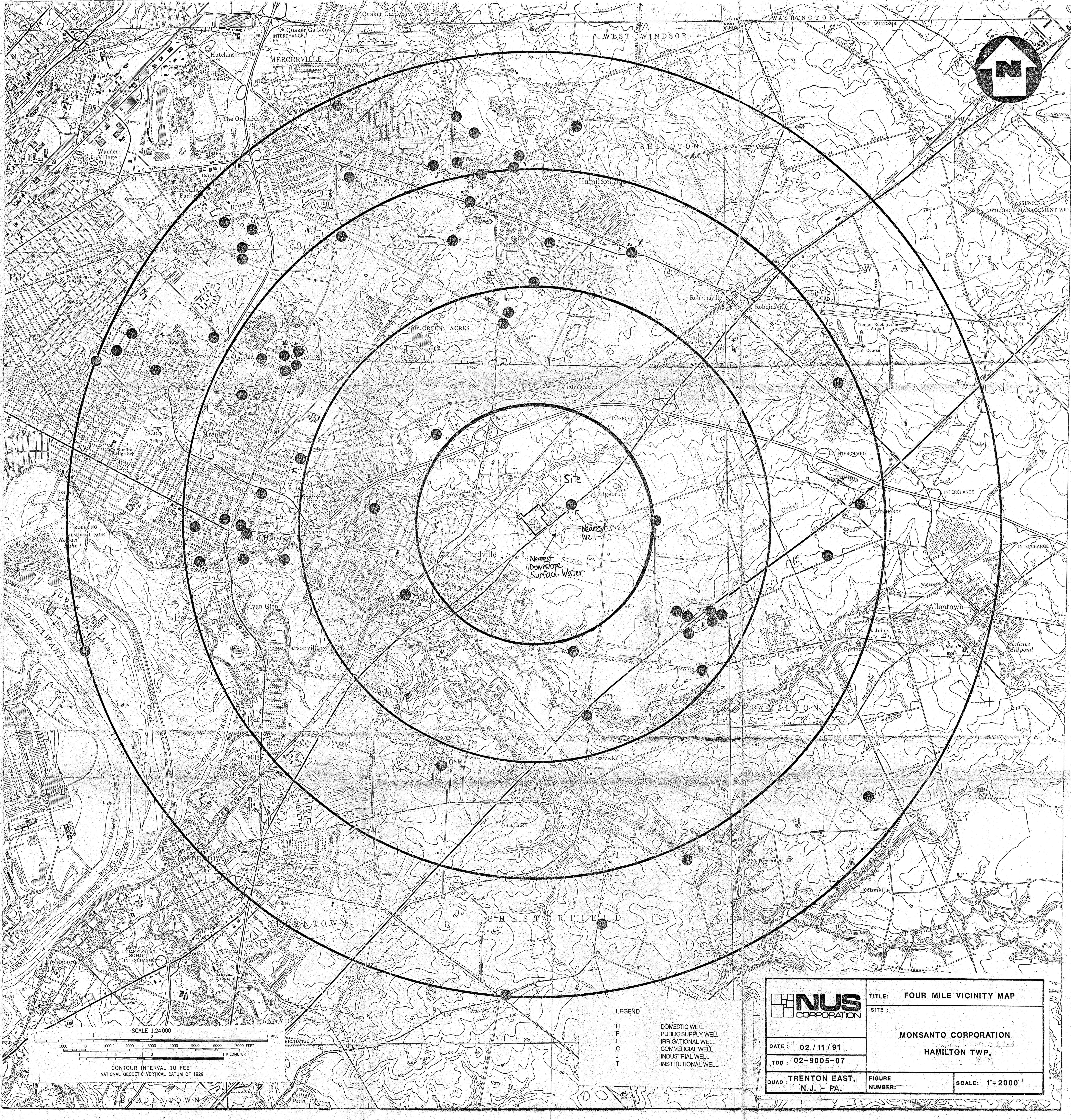
With the exception of the minor oil spillage at the pumphouse and possible contamination at the drum storage pad, there are no obvious major problems which should preclude transfer of ownership of this site.

cc: OHSC



pipeline
1
Water Tank
Propane tanks
Concrete Pad
2
MONSANTO
24" RCP
4
5
Office
3
Transformer
Silos
Rt. 130

REFERENCE NO. 16



NUS CORPORATION	TITLE: FOUR MILE VICINITY MAP
DATE: 02 / 11 / 91	SITE: MONSANTO CORPORATION HAMILTON TWP.
TDD: 02-9005-07	
QUAD: TRENTON EAST, N.J. - PA.	FIGURE NUMBER: — SCALE: 1"= 2000'

REFERENCE NO. 17

NUS CORPORATION

II

0788

MONSANTO CORP.
02-9005-07
TDD MANAGER - A. BONASERA
LOGBOOK #0788
MAY 22, 1991

GUIDANCE FOR PROPER USE OF LOG BOOKS

Purpose

- Serves to document onsite activities and be understandable to an outside reader.
- Provides the basis for later written reports.
- Used as an evidentiary document and may be used in legal proceedings.

Distribution

- Controlled by the project manager and distributed as appropriate to personnel designated by the project manager.

General Procedures

- Record information in language which is objective and factual.
- Use ink. Waterproof ink is recommended.
- Leave first two pages blank. They serve as space for the table of contents to be added when the log book is complete.
- The first written page identifies the date, time, TDD number, site name, location, NUS personnel and their responsibilities, other non-NUS personnel and observed weather conditions.
- Start on a new page at the start of each day's field activities. This page should identify date, time, TDD number, site name and location, NUS personnel and their responsibilities, other non-NUS personnel and observed weather conditions.
- List all persons leaving or entering the site.
- Information recorded in the log book should be in chronological order.
- Sign and date each page, log all entries using a 24 hour clock. Entries should be time logged every 15 to 30 minutes.
- Corrections are to be lined through and initialed. No erroneous notes are to be made illegible.
- Include a sketch or map of the site which can be used to locate photo or sample locations. Note landmarks, indicate north, and if possible include an approximate scale. Include as many sketches and maps as necessary.
- A person not present when field activities were being documented should read each completed page, and countersign and date when satisfied that the written notes are understandable.

Specific Field Activities To Be Documented

- Record the who, what and where of field activities.
- Indicate sampling and photo locations on a site sketch or map.
- As part of the chain of custody procedure, recorded in-situ sampling information must include sample number, date, time, sampling personnel, sample type, designation of sample as a grab or composite, and any preservative used.
- Information for in-situ measurements must include a sample ID number, the date, time, and personnel taking measurements. Pertinent in-situ measurements include but are not limited to pH, temperature, conductivity, flow measurements, continuous air monitoring measurements, and stack gas analysis. If infield calculations are necessary they must be checked and signed by a second team member.
- Create a photo log to document photos taken in the field. These must include date, time, photographer, sample number, roll number, frame number, photo ID number and description. Indicate if the film is for slides or prints in the column for roll number. Photo ID numbers can be added at the time the photo log is assembled.
- Record onsite health and safety measures used. Describe observed potential hazards to health and safety. Document the level of protection used, decontamination procedure used and specific decontamination solutions.
- When sampling is complete, a summary log is to be completed. It must include date, time, sample number, description, field book reference page, and the number and date of the chain of custody from which the sample is listed. Indicate whether or not the sample was split.
- Record details regarding relevant information obtained during onsite interviews. Include names of persons interviewed, the interest group represented, their address and phone number.
- Record any other relevant information which would be difficult to generate at a later date.

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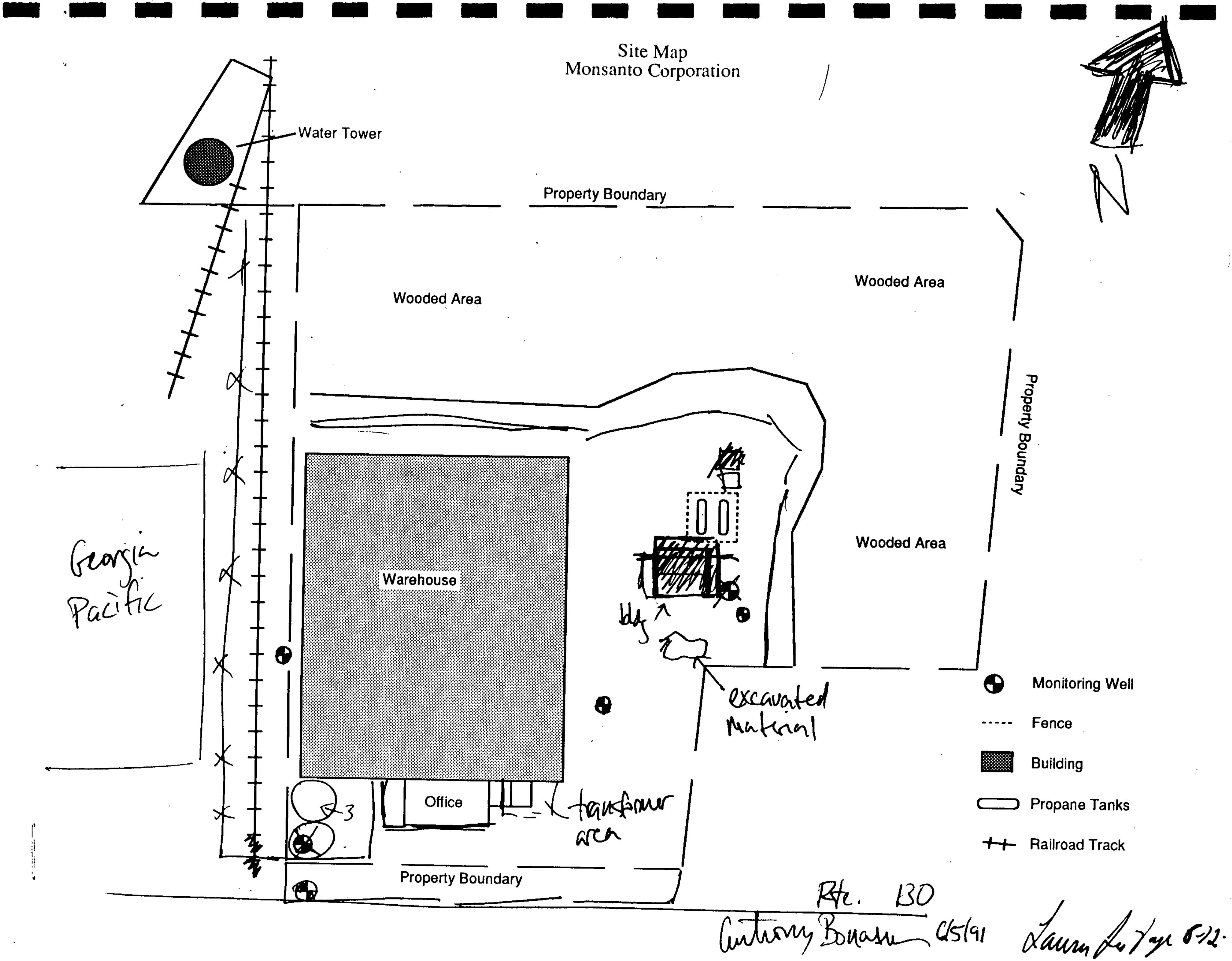
Site Map
Monsanto Corporation
Water Tower
Property Boundary
Wooded Area
Wooded Area
Property Boundary
Wooded Area
Georgia Pacific
Warehouse
bldg
excavated Material
Office
transformer area
Property Boundary
Rte. 130
N
Monitoring Well
Fence
Building
Propane Tanks
Railroad Track
3
Anthony Bonasera 6/5/91
Laura La Faye 8-12-

DIRECT NUMBER
212-326-8355

CAROL A. SURGENS

JONES, DAY, REAVIS & POGUE
599 LEXINGTON AVENUE, NEW YORK, NEW YORK 10022
212-326-3939
TELEX: 237013 JDRP UR • TELECOPIER: 212-755-7306

ATLANTA, AUSTIN, BRUSSELS, CHICAGO, CLEVELAND, COLUMBUS,
DALLAS, GENEVA, HONG KONG, LONDON,
LOS ANGELES, PARIS, PITTSBURGH, RIYADH, TOKYO AND WASHINGTON

ROUX

Mitchell Bormack
Staff Geologist

Roux Associates Inc.
1222 Forest Parkway, Suite 190
West Deptford, New Jersey 08066
Tel: (609) 423-8800
Fax: (609) 423-3220

Environmental Consulting & Management

Monsanto Corporation 02-9005-07
Hamilton Twp. Mercer Co., NJ 6/5/91

850 Arrive on Site

Equipment List		EPA ID #
OVA	D	Missing Number
HNu	C	307140
Compass		684175
Camera		469771
Camera		469777
~~Monitor 4~~ AB		
Mini-Rad		428588

The following personnel have read and understood the workplan

Anthony Bonasera SM Anthony Bonasera 6/5/91
Joe Filosa SSO Joe Filosa 6/5/91
Keith Billy Backup/Surveillance Keith Billy 6-5-91

Anthony Bonasera 6/5/91 Laura La Vigne 6-12-91

Monsanto Corporation 02-9005-07
6/5/91

Non NUS Personnel on site:
Carol Surgens
Mitchell Bormack (Roux Assoc.)

The weather conditions are:
Sunny, Clear 60 - 65° F, wind speed
5-10 mph NNW

852 Joe Filosa gives safety tailgate meeting. Topics discussed: route to hospital, contaminents on site

900 Mitchell Bormack from Roux Associates Inc. arrives on site. He inquires to what we will be doing on-site. Told him that we will be taking pictures, and walking around the property.

Anthony Bowman 6/5/91 Laura [illegible] 6-12-91

Mousanto Corporation 02-9005-07 6

6/5/91

915 Site Contact Carol Surgans arrives on site

925 Background readings are:

0 ppm on OVA
0 ppm on HNu

926

1 P,1 S,1 Photo of monitoring well 2
note: no readings on HNu or OVA
note: this well is the upgradient, background well

930

Panoramic

1 P,2,3 S,2,3 Photo of western edge of main warehouse

Anthony Bonasera 6/5/91 Larry Leboy 6-12-91

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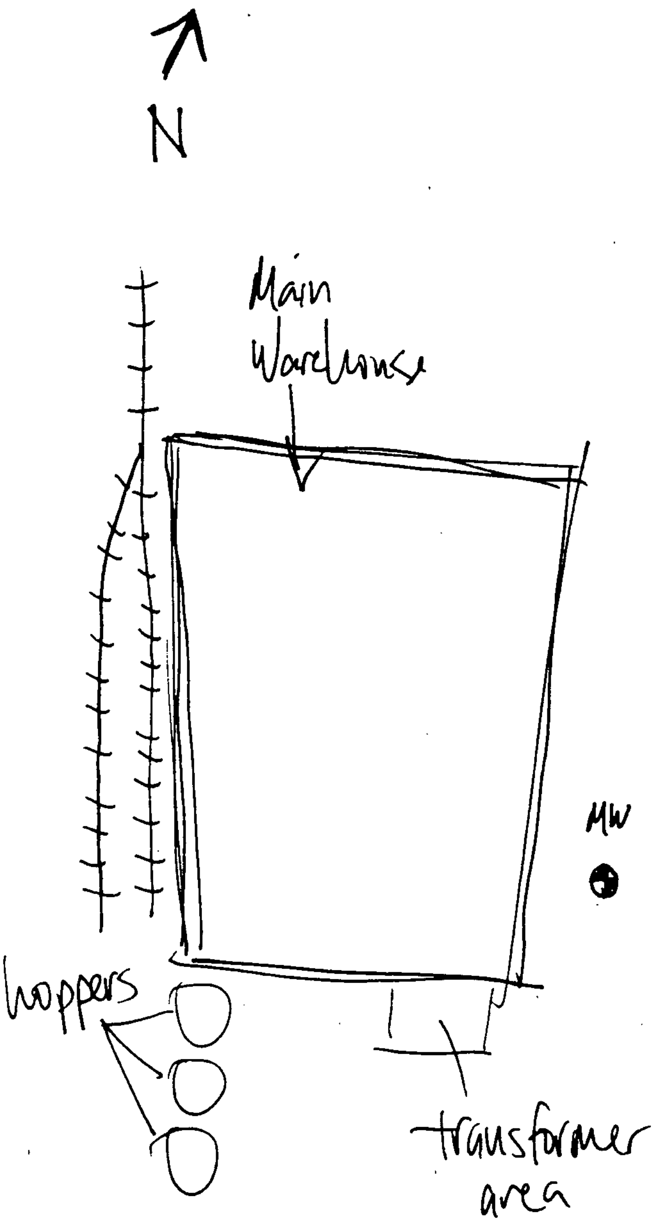
6/5/91



Anthony Bonasso 6/5/91

Lauren LaPage 6-12-91

Monsanto Corporation 02-9005-07 7

6/5/91

935

1 P4,5 S4,5 Photo of transformer area and southern end of bldg.

950

1 P6 S6 Photo of monitoring well in parking lot near main warehouse - directly east

951 Carol Surgens informs us that Monsanto had left 'sorbent material' just south of the small ~~what~~ warehouse. This area had been remediated and a well had been installed. The first sampling from this well indicated high

Anthony Bowman 6/5/91 Laura LaFaye 6-12-91

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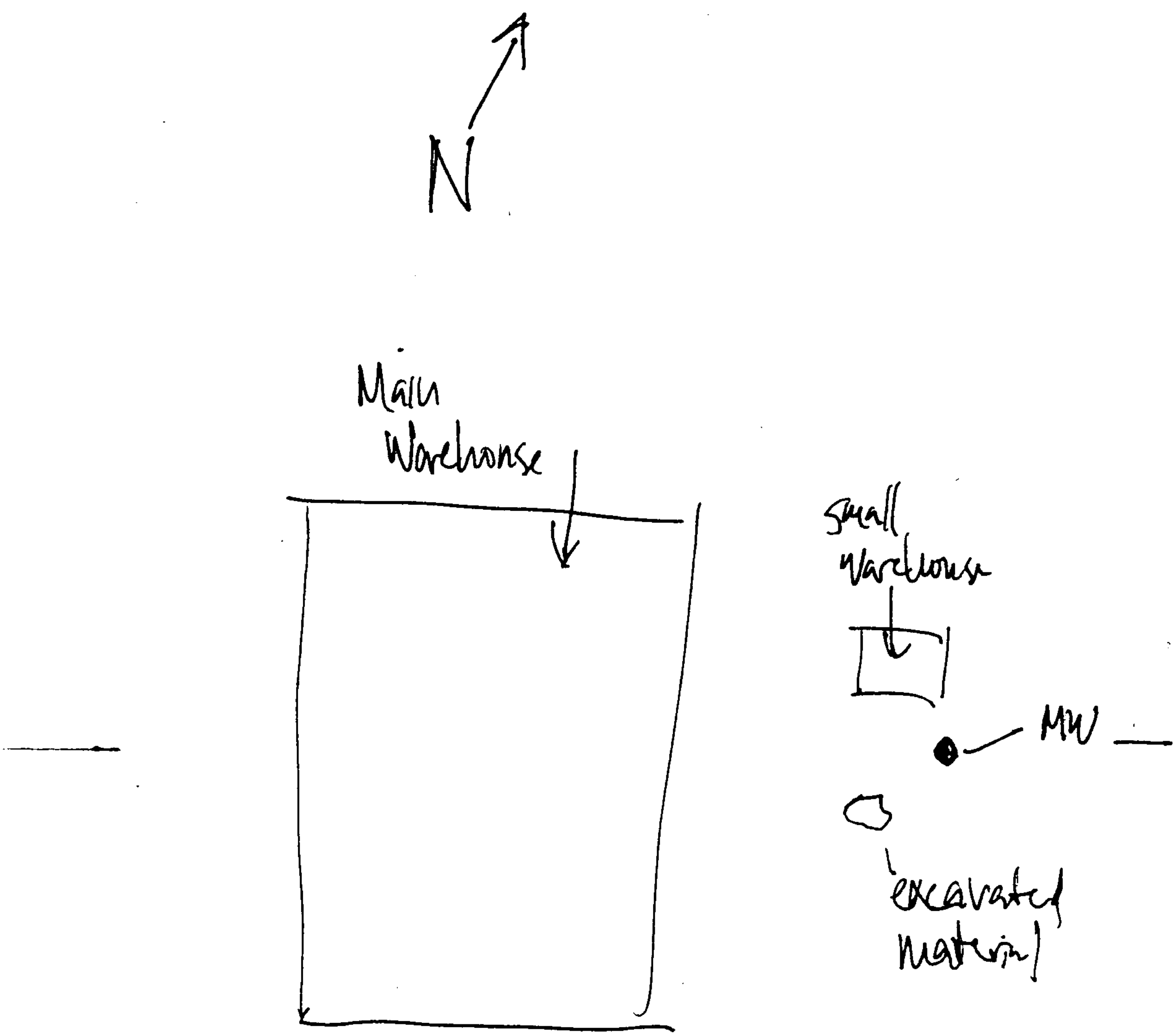
6/5/91



Anthony Bohnsen 6/5/91 Laura LaForge 6-12-91 levels of volatile contaminants, the second sampling from this well indicated a steep drop in volatiles.

1000 | Arrive at area of ~~excavation~~ excavated excavation (approx. 2 years ago)

Note: no readings on OVA or HNu material was removed from site but Carol Surgens is not sure to where, said that ~~Ecra~~ files would contain info. DEP had declared this area of no more concern

1 P7 S7 Photo of excavated material MW _ in background

1005

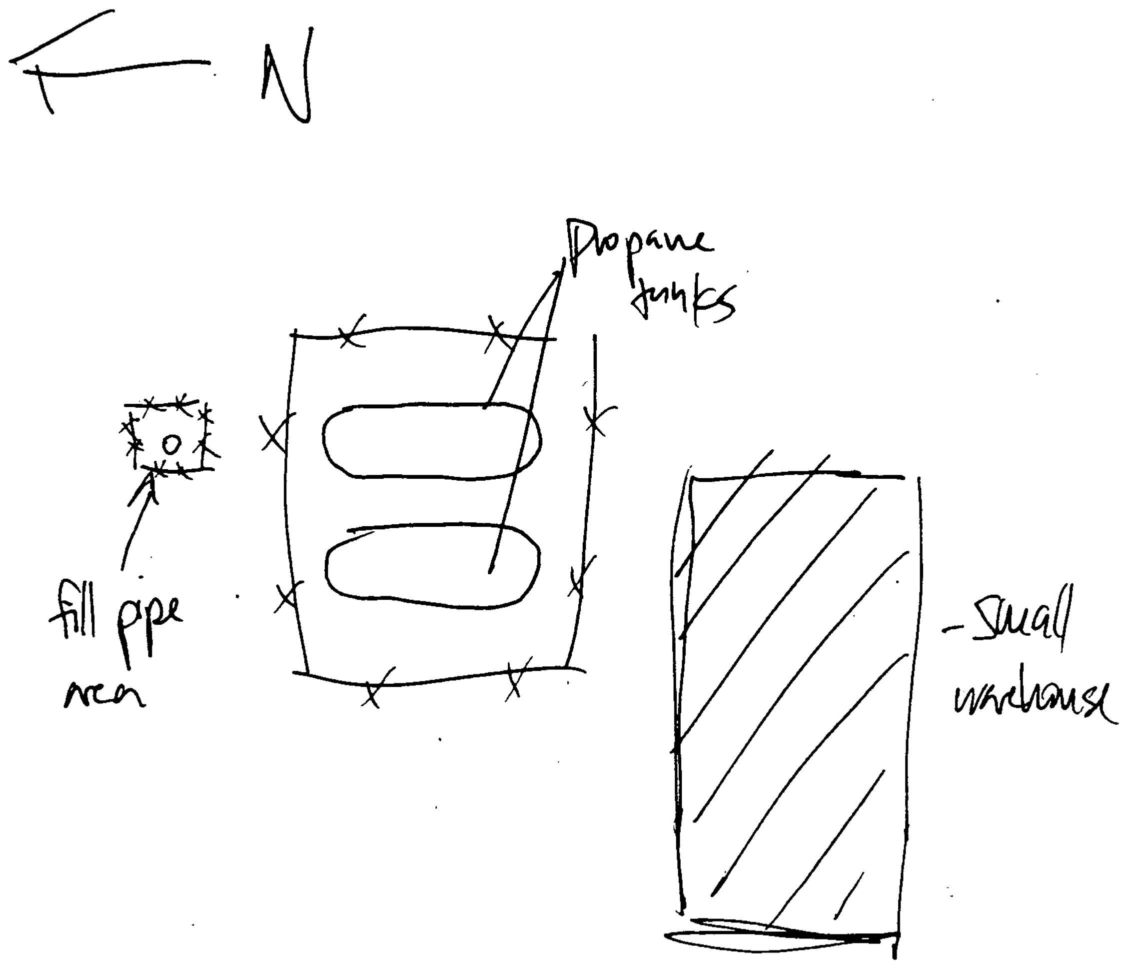
1 P8,9,10 S8,9,10 Panoramic of eastern side of main warehouse

Anthony Bonasera 6/5/91

Lauren LaPaze 6-12-91

Monsanto Corporation 02-9005-07

6/5/91



Anthony Bonasso 6/5/91 Lauren Lilly 6-12-91

Monsanto Corporation 02-9005-07

6/5/91

1010

1 P11, S11 Photo of fenced in propane tanks
note: no reading from OVA or HNu

1015 photo of propane fill pipe area

1 P12, S12

1020 Photo of Northern end of main warehouse looking west

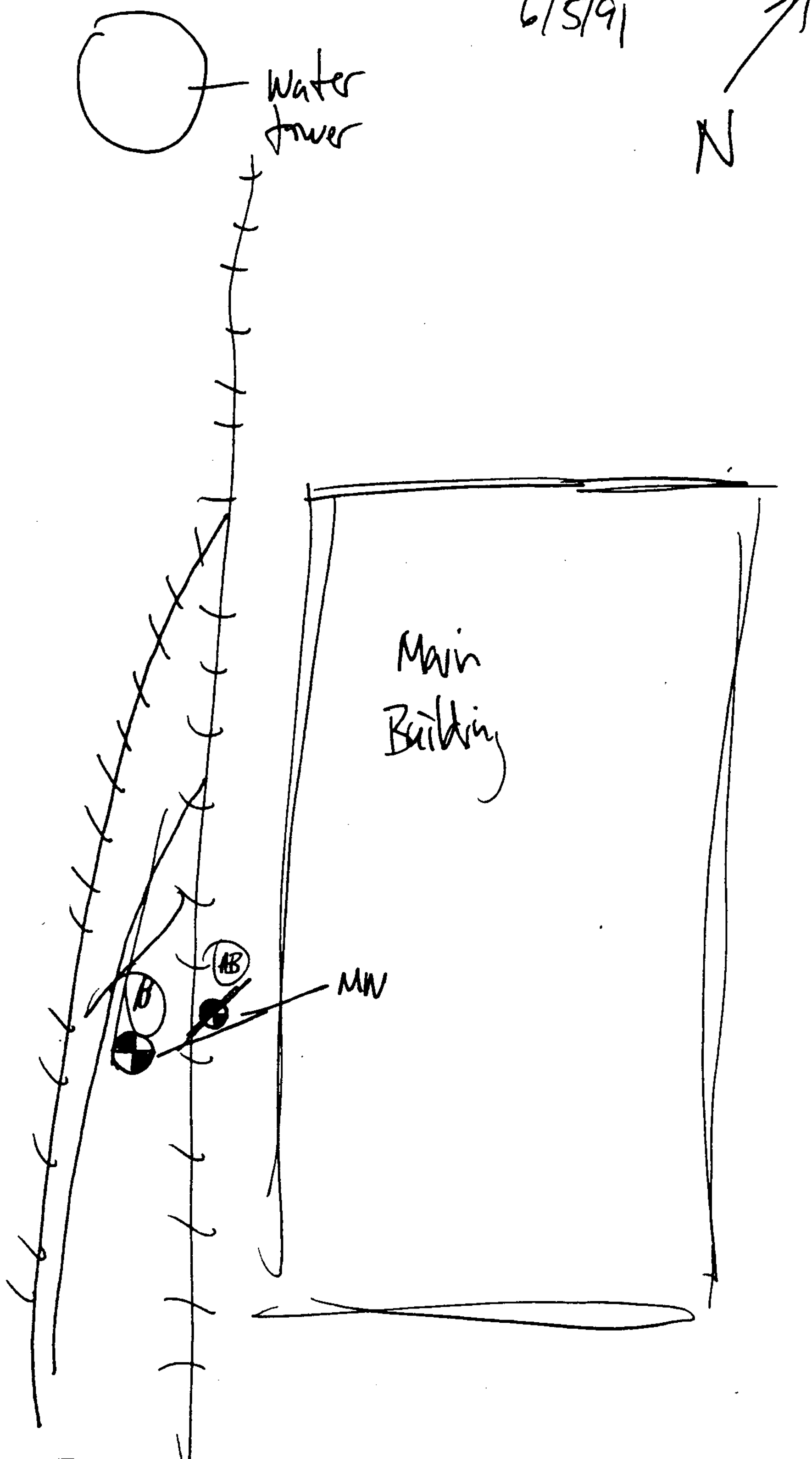
1 P13, S13

Anthony Bonasu 6/5/91

Lauren Lotyo 6.12-91

Monsanto Corporation

02-9005-07
6/5/91



Anthony Bonasera 6/5/91

Laura Lathyr 6.12.91

Monsanto Corporation

02-9005-07
6/5/91

1025 P14, S14 Photo of water tank on north western edge of property

1030 P15, S15 Photo of monitoring well ~~bell~~ (AB) between rail tracks on direct western side of bldg.

Note: no readings on HNu or OVA

1040 proceed back to Suburban

1100 leave site

Anthony Bonasera 6/5/91

Laura Sedge 6-12-91

Monsanto Corporation 02-9005-07
6/5/91

Site Summary

We arrived on site at 8:50 am. and waited for site contacts: Mitchell Borbrack and Carol Surgens to arrive. At 9:15 am Carol Surgens arrived and we discussed what we would be doing: what we would look for during our reconnaissance. She informed me that Roux Associates would provide any data that I would need to 'De-list' the site. I told her that EPA would review our recommendation, which would be made after gathering all sample data and then decide how to proceed with the site.

At 10:40 am. Carol Surgens explained in further detail what Monsanto actually did while they were active. She said that they made plastic bottles and that during the time they were there they had only dumped waste oil from processes (At that time the trains were used heavily) on a section of rail just west of the main warehouse. She said further that 'sorbent material' was put temporarily, as Monsanto was vacating the property, in a mound south of the 'small warehouse'. This material was removed, and then the soil beneath it was later removed

Anthony Bomasu 6/5/91 Laura Leahy 6-12-91

Monsanto Corporation 02-9005-07
Site Summary (Cont'd) 6/5/91

and a monitoring well had been installed of which the first sampling results indicated high levels of volatiles and the second sampling some time later revealed a sharp decrease in the concentrations of volatile chemicals.

Carol Surgens and Mitchell Bormack inquired more about what we were trying to do with the site. I explained that the recon is just an appraising event; to take pictures and obtain www files if possible, and that sampling data in existance would be used in support of a reccommendation to EPA. I also informed her that she may request a copy of the Final Draft SI Report from the EPA.

Anthony Bonasera 6/5/91 Laura Lu[illegible] 6-12-91

Monsanto Corporation 02-9005-07
6/5/91

Photo Log

Photo Number	Description	Time
1 P1, S1	View looking south at monitoring well 2	926
1 P2,3 S2,3	Panoramic view looking north of western side of main warehouse	930
1 P4,5 S4,5	Panoramic view looking west of transformer area and the southern end of office bldg.	935
1P6 S6	View looking east of monitoring well in parking lot, directly east of the main warehouse	950
1P7 S7	View looking north of excavated material. Monitoring well in background	1000

Anthony Bonasse 6/5/91 Lauren Lutz 6-12-91

Monsanto Corporation 02-9005-07

6/5/91

Photo log (cont'd)

Photo Number	Description	Time
1 P8,9,10 S 8,9,10	Panoramic view looking west of eastern side of main warehouse	1005
1 P11 S11	View looking north of fenced in propane tanks	1010
1 P12 S12	View looking east of propane fill pipe area	1015
1 P13 S13	View looking west of northern end of main warehouse	1020
1 P14 S14	View looking north of water tank	1025
1 P15 S15	View of monitoring well between rail tracks directly west of main warehouse	1030

Anthony Bowman 6/5/91 Laura Lafoy 6-12-91

REFERENCE NO. 18

GWSI

UNIQUE ID	SITE OWNER	LOCAL ID	MUNICIPALITY	LAT	LON	ALTITUDE	DEPTH	DIAMETER	STATION ID	AQUIFER	SCREENED INTERVAL		W	S	DATE	PERMIT	DEPTH DRILLED	UNIQUE ID
190057	O'SHEA, WILLIAM	HOUSE 2	WEST AMWELL TWP	402134	0745421	405	350		402134074542101	231BRCK			H	W			350	190057
190058	SUPERNAVAGE, MARLENE	SUPERNAVAGE 1	WEST AMWELL TWP	402130	0745414	400	400	6	402130074541401	231BRCK	40	400	H	W	19761021	27-06112	400	190058
190059	CUNNINGHAM'S NURSERY	2-NURSERY	WEST AMWELL TWP	402150	0745218	385	200	6	402150074521801	231LCKG	21	200	I	W	19650614	27-04512	200	190059
190059	CARNAVALE CONSTRUCTION	2-NURSERY	WEST AMWELL TWP	402150	0745218	385	200		402150074521801	231LCKG			I	W			200	190059
190060	CUNNINGHAM BROS	1-GREENHOUSE	WEST AMWELL TWP	402148	0745220	385	405	6	402148074522001	231LCKG	30	405	I	W	19650526	27-04488	405	190060
190060	CARNAVALE CONSTRUCTION	1-GREENHOUSE	WEST AMWELL TWP	402148	0745220	385	405		402148074522001	231LCKG			I	W			405	190060
190061	BROWN, JAMES	BROWN 1	KINGWOOD TWP	402812	0750259	460	400	6	402812075025901	231BRCK	50	400	H	W	19830809	24-16019	400	190061
190062	TITANIUM ZIRCONIUM CO	PLANT 1	KINGWOOD TWP	403009	0745805	550	100	6	403009074580501	231LCKG	20	100	N	W	19521215	24-00793	100	190062
190062	MAGNESIUM ELECKTRON	PLANT 1	KINGWOOD TWP	403009	0745805	550	100		403009074580501	231LCKG			N	W			100	190062
190063	ZION LUTHERAN CHURCH	CHURCH SCHOOL	TEWKSBURY TWP	404019	0744446	200	230	6	404019074444601	231BRCK	107	230	T	W	19740612	25-17491	230	190063
190064	DURLING FARMS, INC	1-INSIDE PLANT	READINGTON TWP	403730	0744533	100	193	10	403730074453301	231BRCK	23	193	N	W	19581201	24-03131	193	190064
190064		1-INSIDE PLANT	READINGTON TWP	403730	0744533	100	193	6	403730074453301	231BRCK			N	W			193	190064
190065	JENSEN, BRUCE	JENSEN 1	READINGTON TWP	403304	0744733	180	190	6	403304074473301	231BRCK	67	190	H	W	19751212	25-18075	190	190065
190066	FIDDLERS ELBOW COUNTRY CL	MAINTENANCE BLDG	READINGTON TWP	403816	0744339	120	260	6	403816074433901	231BRCK	60	260	H	W	19801204	25-21732	260	190066
190067	MOHAWK MANUFACTURING CO	INDUSTRIAL-1	READINGTON TWP	403623	0744404	165	150	6	403623074440401	231BRCK	43.83	150	N	W	19671004	25-14399	150	190067
190068	FLEMINGTON BORO	6-MEMORIAL FIELD	FLEMINGTON BORO	403025	0745111	170	400	8	403025074511101	231BRCK	63	400	P	W	19770321	24-11882	400	190068
190069	UNION TWP BOARD OF EDUCAT	UNION TWP HS	UNION TWP	403750	0745811	375	148	8	403750074581101	230TRSC	61.5	148	T	W	19530822	24-01207	148	190069
190069		UNION TWP HS	UNION TWP	403750	0745811	375	148	6	403750074581101	230TRSC			T	W			148	190069
190070	ROSEMONT WATER CO	ROSEMONT 1	DELAWARE TWP	402545	0745916	310	400	15	402545074591601	231SCKN	200	400	P	W	19651203	27-04579	400	190070
190070		ROSEMONT 1	DELAWARE TWP	402545	0745916	310	400	8	402545074591601	231SCKN			P	W			400	190070
190071	ETHYL VISQUEEN CORP	1-DEEPENED WELL	RARITAN TWP	403116	0745002	120	546	14	403116074500201	231BRCK	32	419.5	N	W	19540000	24-01460	546	190071
190071		1-DEEPENED WELL	RARITAN TWP	403116	0745002	120	546	10	403116074500201	231BRCK	419.5	546	N	W	19591218		546	190071
190071		1-DEEPENED WELL	RARITAN TWP	403116	0745002	120	546	10	403116074500201	231BRCK			N	W			546	190071
190072	DURLING FARMS, INC	DAIRY-1985	READINGTON TWP	403726	0744536	140	275	8	403726074453601	231BRCK	50	275	S	W	19850222	24-18214	275	190072
190073	HIGGINS, WARREN	HIGGINS 1	LAMBERTVILLE CITY	402146	0745612	240	175	6	402146074561201	231BRCK	55	175	H	W	19770329	27-06207	175	190073
190074	WEST AMWELL TWP	MUNICIPAL BLDG 1	WEST AMWELL TWP	402341	0745436	290	107	10	402341074543601	231BRCK	30.33	107	C	W	19500626	27-00171	107	190074
190074		MUNICIPAL BLDG 1	WEST AMWELL TWP	402341	0745436	290	107	6	402341074543601	231BRCK			C	W			107	190074
190075	HUNTERDON COUNTY	COUNTY GARAGE 1	RARITAN TWP	403014	0745346	450	565	6	403014074534601	231BRCK	50	565	T	W	19800214	24-14490	565	190075
190076	RIEGEL PAPER CO	JAMES RIVER 3	MILFORD BORO	403344	0750523	140	370	10	403344075052301	231BRCK	35.83	370	J	W	19540429	44-00010	370	190076
190077	STOCKTON BORO	WD 3	STOCKTON BORO	402425	0745830	200	278	8	402425074583001	231SCKN	41.43	278	P	W	19440000	47-00008	278	190077
190078	STOCKTON BORO	STOCKTON WD 4	STOCKTON BORO	402429	0745823	255	329	12	402429074582301	231SCKN	102.08	329	P	W	19561003	27-02179	329	190078
190078		STOCKTON WD 4	STOCKTON BORO	402429	0745823	255	329	8	402429074582301	231SCKN			P	W			329	190078
190079	CLINTON WATER COMPANY	4-POTTERSTOWN	CLINTON TWP	403936	0744824	370	300	14	403936074482401	230TRSC	52.67	300	P	W	19640909	24-05326	300	190079
190079		4-POTTERSTOWN	CLINTON TWP	403936	0744824	370	300	10	403936074482401	230TRSC			P	W			300	190079
190080	BRITTON, CHARLES	BRITTON 1	WEST AMWELL TWP	402153	0745204	370	200	6	402153074520401	231LCKG	20	200	H	W	19391026		200	190080
190081	DUBROW, AL	SHALLOW	WEST AMWELL TWP	402134	0745421	405	90	6	402134074542102	231BRCK	20	90	I	W	19500000		90	190081
190081	O'SHEA, WILLIAM	SHALLOW	WEST AMWELL TWP	402134	0745421	405	90		402134074542102	231BRCK			I	W			90	190081
190082	FRANKLIN TWP SCHOOL	1-1937	FRANKLIN TWP	403403	0745653	610	90	6	403403074565301	231LCKG	30	90	T	W	19370000		90	190082
190083	SCHLACTOR, GEORGE	VORONIN 1	KINGWOOD TWP	403003	0750000	510	168	6	403003075000001	231BRCK	40	168	H	W	19620000		168	190083
190083	VORONIN, LOIS M	VORONIN 1	KINGWOOD TWP	403003	0750000	510	168		403003075000001	231BRCK			H	W			168	190083
190084	COLE, RICHARD	COLE 1	READINGTON TWP	403405	0744410	120	77	6	403405074441001	231BRCK	17	77	H	W	19610000		77	190084
190085	DIXON, WILLIAM	DIXON 1	WEST AMWELL TWP	402143	0745359	445	388	6	402143074535901	231BRCK	50	388	H	W	19870700		388	190085
190123	FISHER, HENRY H JR	FISHER FARM 1	DELAWARE TWP	402622	0745839	310.0	147.0	6.0	402622074583901	231SCKN	62.0	147.0	H	W	19710806	27-05398	147.0	190123
190152	DENHOLLANDER, DAVID AND J	GARDEN STATE GRO	FRANKLIN TWP	403327	0745658	615.0	200.0	8.0	403327074565801	231LCKG	61.0	200.0	H	W	19810618	24-15235	200.0	190152
190227	GRAMLICH, GEORGE	GRAMLICH DOMESTI	FLEMINGTON BORO	403319	0745428	685	110		403319074542801	231LCKG			H	W	19630000			190227
190228	ACCETTOLA, ALBERT	ACCETTOLA DOMEST	READINGTON TWP	403338	0745031	245	200.00		403338074503101	231BRCK	55	200	H	W	19810327	24-15106		190228
190229	LEON, SAMUEL	LEON DOMESTIC	FRENCHTOWN BORO	403314	0745923	530	100.00	6.0	403314074592301	231BRCK	31.0	100.0	H	W	19641125	24-05380		190229
190230	ALLEN, THOMAS	ALLEN DOMESTIC	EAST AMWELL TWP	402358	0745103	470			402358074510301	231BRCK			H	W				190230
190231	NJ CORRECTIONAL INSTITUTE	CLINTON PRISON	CLINTON TWP	403733	0745619	270.0	65		403733074561901	360ODVC			P	W	19220000		65	190231
190232	VAN DOREN, MARGARET	VAN DOREN DOMEST	EAST AMWELL TWP	402708	0744714	130.0	145.0		402708074471401	231BRCK	52	145	H	W	19870410	27-08820		190232
190233	COSTELLO, B J	ARGUS INTERNATIO	WEST AMWELL TWP	402351	0745056	370	100	6.0	402351074505601	231BRCK	30	100	C	W	19680625	27-05013	100	190233
190233	ARGUS INTERNATIONAL	ARGUS INTERNATIO	WEST AMWELL TWP	402351	0745056	370	100		402351074505601	231BRCK			C	W			100	190233
190234	GENE GODLY BLDG CORP	PISARCIK	EAST AMWELL TWP	402446	0744908	470	100	6	402446074490801	231LCKG	51	100	H	W	19780906	27-06455	100	190234
190234	PISARCIK, D	PISARCIK	EAST AMWELL TWP	402446	0744908	470	100		402446074490801	231LCKG			H	W			100	190234
190235	GORDEUK, STEPHEN	GORDEUK 1945	KINGWOOD TWP	403053	0750056	420.0	190.0	10	403053075005601	231BRCK	25.42	190.0	I	W	19450504	24-03005	190.0	190235
210001	TEDESCO, DANIEL	1959	EAST WINDSOR TWP	401347	0743052	125.00	315		401342074310001	211ODBG	285.00	315.00	U	W	1959			210001
210001	SKEBA	1959	EAST WINDSOR TWP	401347	0743052	125.00	315		401342074310001	211ODBG			U	W				210001
210002	BELLARDO, LEWIS	1-1953	EAST WINDSOR TWP	401353	0743142	145.00	92.0		401353074314201	211EGLS	89.00	92.00	H	W	19531216	28-00101		210002
210003	HANCOCK, ERNEST	HANCOCK 2	EAST WINDSOR TWP	401359	0743217	120.00	38.0		401359074321701	112PNSK	28.00	38.00	H	W	1956	28-01911		210003
210004	PRNCTON TURF FM	S.KRISTAL 1973	EAST WINDSOR TWP	401408	0743114	145.00	330		401405074312401	211MRPAU	290.00	330.00	I	W	19730808	28-07959		210004
210005	G&G FARMS	1-1958	EAST WINDSOR TWP	401428	0742921	120.00	55.0		401428074292101	211EGLS	51.00	55.00	H	W	19580425	28-03093		210005
210006	WEINER, B	1-1952	EAST WINDSOR TWP	401449	0743147	150.00	198		401449074314701	211ODBG	193.00	198.00	H	W	19520207	28-00479		210006
210007	CONOVER DAIRY	1-1949	EAST WINDSOR TWP	401458	0743152	145.00	251		401456074315401	211MRPAU	241.00	251.00	U	Z	19490120			210007
210008	TRAPAMO, ANGELO	1-1953	EAST WINDSOR TWP	401509	0743023	120.00	31.0		401509074302301	211EGLS	28.00	31.00	H	W	19530622	28-00862		210008
210009	SACHOWITZ, HARRY	9-1957	EAST WINDSOR TWP	401513	0742906	120.00	51.0		401513074290601	211EGLS	47.00	51.00	H	W	19570904	28-02722		210009
210010	DECKERS DAIRY	1955	EAST WINDSOR TWP	401518	0743311	120.00	310		401518074331101	211FRNG	295.00	310.00	H	W	19550228	28-01552		210010
210011	MELICHAREK, F	1956	EAST WINDSOR TWP	401527	0743410	100.00	108		401527074341001	211ODBG	105.00	108.00	H	W	19560513	28-02076		210011
210012	E WINDSOR MUA	6 TWIN RIVERS	EAST WINDSOR TWP	401536	0742920	115.00	560		401536074292001	211FRNG	520.00	560.00	P	W	19710105	28-07034		210012
210013	E WINDSOR MUA	TEST WELL 5	EAST WINDSOR TWP	401536	0742920	120.00	553		401536074292002	211FRNG	543.00	553.00	U	T	1970	28-06864		210013
210014	NJ TURNPIKE AU	MAINTENANCE 3	EAST WINDSOR TWP	401559	0743043	120.00	181		401559074304301	211ODBG	171.00	181.00	C	W	19510710	28-00265		210014
210015	KOLLMAR, WALTER	1-1953	EAST WINDSOR TWP	401600	0743237	115.00	165		401600074323701	211ODBG	162.00	165.00	H	W	19530629	28-00869		210015
210016	E WINDSOR MUA	EWMUA 4	EAST WINDSOR TWP	401604	0743358	90.00	145		401604074335801	211ODBG	125.00	145.00	U	Z	19620910	28-04487		210016
210017	CRANSTON, GEORGE	1	EAST WINDSOR TWP	401604	0743404	100.00	136		401604074340401	211ODBG	106.00	136.00	I	W	19540724	28-01274		210017
210018	CAPAZELLO FARMS	1-IRR	EAST WINDSOR TWP	401558	0743003	110.00	250		401606074300201	211ODBG			U	U	1941			210018
210019	E WINDSOR MUA	EWMUA 5	EAST WINDSOR TWP	401608	0743354	90.00	175		401608074335401	211ODBG	133.00	181.00	P	W	19660808	28-05897		210019
210020	GILBERT, C B	1-1949	EAST WINDSOR TWP	401614	0743223	115.00	68.0		401614074322301	211ODBG	65.00	68.00	H	W	19490321	28-00100		210020
210021	MCGRAW HILL PUB	MCGRAW HILL !	EAST WINDSOR TWP	401631	0743246	97.00	173		401631074324601	211ODBG	153.00	173.00	N	W	1958			210021
210022	E WINDSOR MUA	EWMUA 3	EAST WINDSOR TWP	401702	0743106	100.00	367		401702074310601	211FRNG	337.00	367.00	P	W	19650828	28-05440		210022
210023	RCA ASTRO ELEC	1-1957	EAST WINDSOR TWP	401716	0743338	95.00	226		401716074333801	211FRNG	206.00	226.00	N	W	19570522	28-02493		210023
210024	RCA ASTRO ELEC	4 1964	EAST WINDSOR TWP	401717	0743336	100.00	232		401717074333601	211FRNG	212.00	232.00	N	W	19640528	28-05053		210024
210025	HIGHTSTOWN RUG	KENTILE 1	EAST WINDSOR TWP	401717	0743352	100.00	229	20.00	401717074335201	211FRNG	205.00	215.00	F	W	19540727			210025
210025	KENTILE CO	KENTILE 1	EAST WINDSOR TWP	401717	0743352	100.00	229		401717074335201	211FRNG	206.00	226.00	F	W				210025
210025	CARTER WALLACE	KENTILE 1	EAST WINDSOR TWP	401717	0743352	100.00	229		401717074335201	211FRNG			F	W				210025
210026	E WINDSOR MUA	EWMUA 2	EAST WINDSOR TWP	401725	0743159	100.00	290		401725074315901	211FRNG	260.00	290.00	P	W	19640506	28-04935		210026
210027	E WINDSOR MUA	EWMUA 1	EAST WINDSOR TWP	401730	0743202	98.00	295		401730074320201	211FRNG	279.00	295.00	P	W	19640320	28-04934		210027
210028	STATE OF NJ	CIVIL DEFENSE	EWING TWP	401553	0745012	122.99	300		401552074501801	231SCKN	33.00	300.00	U	O	19640102	27-04214		210028
210029	EWART, CHARLES	1-1952	HAMILTON TWP	400918	0743610	100.00	35.0		400918074361001	211EGLS	30.00	35.00	H	W	19520205	28-00483		210029
210030	CROSSWICKS W C	CROSSWICKS WC1	HAMILTON TWP	400954	0743853	23.00	299		400954074385301	211MRPAM	268.00	299.00	P	W	1959	28-03645		210030
210030	GARDEN STATE WC	CROSSWICKS WC1	HAMILTON TWP	400954	0743853	23.00	299		400954074385301	211MRPAM			P	W				210030
210031	SADLEY, PETER	1-1953	HAMILTON TWP	401016	0743745	80.00	193		401016074374501	211MRPA	188.00	193.00	H	W	19531110	28-01081		210031

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UNIQUE ID	SITE OWNER	LOCAL ID	MUNICIPALITY	LAT	LON	ALTITUDE	DEPTH	DIAMETER	STATION ID	AQUIFER	SCREENED INTERVAL		W	S	DATE	PERMIT	DEPTH DRILLED	UNIQUE ID
210032	MASON, LOUIS	1-1954	HAMILTON TWP	401023	0743900	60.00	132		401023074390001	211MRPA	128.00	132.00	H	W	1954	28-01207		210032
210033	NJ TURNPIKE AU	6N-2	HAMILTON TWP	401030	0743753	85.00	184		401030074375301	211MRPAU	164.00	184.00	N	W	19560107	28-01954		210033
210034	NJ TURNPIKE AU	6N-1R	HAMILTON TWP	401033	0743740	91.00	311		401033074374001	211MRPAM	291.00	311.00	N	W	19720706	28-07497		210034
210035	NJ TURNPIKE AU	6N-3	HAMILTON TWP	401037	0743734	100.00	334		401037074373401	211MRPA	314.00	334.00	N	W	19600616	28-03854		210035
210036	NJ TURNPIKE AU	6N-1	HAMILTON TWP	401037	0743741	90.00	207		401037074374101	211MRPA			N	W	19550614	28-01671		210036
210037	NJ TURNPIKE AU	6S-1	HAMILTON TWP	401039	0743756	90.00	200		401039074375601	211MRPA	170.00	200.00	N	W	19550915	28-01672		210037
210038	NJ TURNPIKE AU	6S-2	HAMILTON TWP	401040	0743759	90.00	190		401040074375901	211MRPA	178.00	190.00	N	W	19560126	28-01953		210038
210039	STAUFFER CHEM	1 (KEYE TEX)	HAMILTON TWP	401048	0744036	55.00	199		401048074403601	211MRPAM	179.00	199.00	N	W	19640210	28-09807		210039
210040	HAMILTON TWP WD	1949	HAMILTON TWP	401101	0744235	35.00	126		401101074423501	211MRPA	114.00	126.00	I	W	1949			210040
210041	BORDENTOWN W D	3-72	HAMILTON TWP	401103	0744134	20.00	135		401103074413401	211MRPA	112.00	135.00	U	T	19720216	28-07905		210041
210043	BORDENTOWN W D	WHITE HORSE 2	HAMILTON TWP	401103	0744155	10.00	138		401103074415501	211MRPAM	118.00	138.00	P	W	19650323	28-05409		210043
210044	BORDENTOWN W D	WHITE HORSE 1	HAMILTON TWP	401105	0744212	20.00	121		401105074421201	211MRPAM	101.00	121.00	P	W	1964	28-05150		210044
210045	BORDENTOWN W D CITY OF	4	HAMILTON TWP	401115	0744208	80.00	121	12.00	401115074420801	211MRPA	81.00	121.00	P	W	19750514	28-08769	137	210045
210046	CHRYANOWSKI,L S	1-1957	HAMILTON TWP	401119	0743810	60.00	141		401119074381001	211MRPAU	138.00	141.00	H	W	19570716	28-02489		210046
210047	AGABITI, A	1-1958	HAMILTON TWP	401122	0744221	95.00	48.0		401122074422101	211MRPA	45.00	48.00	H	W	19580524	28-03119		210047
210048	BUCKLEY, FRANK	1-1953	HAMILTON TWP	401126	0743858	60.00	123		401126074385801	211MRPA	120.00	123.00	H	W	19531021	28-01056		210048
210049	EMIL, B	EMIL 1	HAMILTON TWP	401159	0744049	70.00	142		401159074404901	211MRPA	128.00	142.00	H	W	19570503			210049
210050	WARD, TERRY F	1957	HAMILTON TWP	401229	0744139	90.00	76.0		401229074413901	211MRPA	73.00	76.00	H	W	19570829	28-02691		210050
210051	SESINI, V W	1952	HAMILTON TWP	401231	0744141	90.00	124		401231074414101	211MRPA	120.00	124.00	H	W	19520419	28-00562		210051
210052	PLAVCHAK, EDWARD	1958	HAMILTON TWP	401242	0744224	75.00	92.0		401242074422401	211MRPA	89.00	92.00	H	W	19580520	28-03105		210052
210053	LOTTO, KOKESH	1957	HAMILTON TWP	401248	0743940	85.00	79.0		401248074394001	211ODBG	67.00	79.00	H	W	19571011	28-02789		210053
210054	GARDEN STATE WC	ROBRT FROST 10	HAMILTON TWP	401305	0743921	85.00	243		401318074390401	211MRPAM	194.00	243.00	P	W	1962	28-04602		210054
210055	CUBBERLEY, EDITH	1953	HAMILTON TWP	401319	0743823	100.00	28.0		401319074382301	111HPPM	22.00	28.00	H	W	19530903			210055
210056	AGINS, WILBUR	1956	HAMILTON TWP	401319	0744213	60.00	55.0		401319074421301	211MRPA	52.00	55.00	H	W	19560404	28-02056		210056
210057	BARTON, FRANCIS	1952	HAMILTON TWP	401324	0743910	100.00	168		401324074391001	211MRPA	158.00	168.00	H	W	1952	28-00702		210057
210058	VARAMJAK, STEP	1953	HAMILTON TWP	401325	0744112	85.00	79.0		401325074411201	211MRPA	75.00	79.00	H	W	19530318	28-00803		210058
210059	HUTCHINSON, ROB	1953	HAMILTON TWP	401329	0744205	80.00	90.0		401329074420501	211MRPA	86.00	90.00	H	W	19531127	28-01101		210059
210060	LOCKWOOD, JOHN E	1958	HAMILTON TWP	401340	0743957	100.00	153		401340074395701	211MRPA	150.00	153.00	H	W	19580220	28-01264		210060
210061	GARDEN STATE WC	HAMILTON 3	HAMILTON TWP	401352	0743951		218		401352074395101	211MRPA	164.00	218.00	U	Z	1954	28-01363		210061
210062	GARDEN STATE WC	PARK AVENUE 11	HAMILTON TWP	401353	0743951	100.00	207		401353074395101	211MRPAM	162.00	175.00	P	W	19690606	28-06625		210062
210062		PARK AVENUE 11	HAMILTON TWP	401353	0743951	100.00	207		401353074395101	211MRPAM	188.00	207.00	P	W				210062
210063	GARDEN STATE WC	PARK AVENUE 4	HAMILTON TWP	401353	0743952	105.00	220		401353074395201	211MRPA	187.00	202.00	U	Z	19490910	28-00161		210063
210064	GARDEN STATE WC	PARK AVE 3	HAMILTON TWP	401353	0743952	105.00	247		401353074395202	211MRPA			U	Z	1949			210064
210065	GARDEN STATE WC	PARK AVE 6	HAMILTON TWP	401353	0743952	105.00	215		401353074395203	211MRPA			U	Z	1954			210065
210066	GIOVENELLI, D J	1-1955	HAMILTON TWP	401352	0744109	75.0	60.0		401354074411401	211FRNG	55.00	60.00	H	W	19550918	28-01869		210066
210067	MERCER RUBER CO	1954-2	HAMILTON TWP	401357	0743930	105.00	186		401357074393001	211MRPA			I	W	19541122	28-01470		210067
210068	GARDEN STATE WC	PAXSON AVE 5	HAMILTON TWP	401357	0744006	95.00	186		401357074400601	211MRPA			U	Z	1954	28-01183		210068
210069	GARDEN STATE WC	HAMILTON 5	HAMILTON TWP	401402	0743942	100.00	150		401402074394201	211MRPA	130.00	145.00	U	Z	19560330	28-01920		210069
210070	GARDEN STATE WC	(HAM SQ WC) 8	HAMILTON TWP	401410	0743903	105.00	230		401410074390301	211MRPA	200.00	230.00	U	Z	1958	28-02792		210070
210071	JENKINS, HERB N	1954	HAMILTON TWP	401411	0743956	85.00	108		401411074395601	211MRPA	105.00	108.00	H	W	19540504	28-01239		210071
210072	KELLY, JAMES H	1952	HAMILTON TWP	401415	0743855	95.00	125		401415074385501	211MRPA	120.00	123.00	H	W	19520520	28-00254		210072
210073	GARDEN STATE WC	PAXSON AVE 9	HAMILTON TWP	401419	0744007	80.00	144		401419074400701	211MRPA	128.00	144.00	P	W	19580206	28-02927		210073
210074	LAPP, ELEANOR	1953 WELL	HAMILTON TWP	401419	0744244	60.00	45.0		401419074424401	211MRPA	40.00	45.00	H	W	1953	27-00847		210074
210075	GARDEN STATE WC	PAXSON AVE 12	HAMILTON TWP	401420	0744002	76.00	142		401420074400201	211FRNG	120.00	137.00	U	Z	1974	28-08452		210075
210076	SCHULER, H E	SCHULER	HAMILTON TWP	401423	0744115	85.00	70.0		401423074411501	211FRNG	67.00	70.00	H	W	19540512	28-01233		210076
210077	MER CONTRACT CO	1955	HAMILTON TWP	401455	0744100	65.00	83.0		401455074410001	211FRNG	80.00	83.00	H	W	19550505	28-01621		210077
210078	SPRINGSTEEN, GEORGE	1953	HAMILTON TWP	401459	0743935	90.00	86.0		401459074393501	211FRNG	83.00	86.00	H	W	19530827	28-00951		210078
210079	PROBASCO, C B	1954	HAMILTON TWP	401618	0742929	120.00	232		401618074292901	211MRPA	227.00	232.00	H	W	1954	28-01304		210079
210080	COCA-COLA CO	COCA-COLA 1972	HIGHTSTOWN BORO	401558	0743200		180		401558074320001	211MRPA	150.00	180.00	N	W	19720728	28-07577		210080
210081	HIGHTSTOWN W D	HIGHTSTOWN 1	HIGHTSTOWN BORO	401621	0743130	84.00	205		401621074313401	211ODBG	181.00	205.00	P	W	1946			210081
210082	DECKERS DAIRY	1929	HIGHTSTOWN BORO	401622	0743104	110.00	200		401622074310401	211MRPA	194.00	200.00	N	W	1929			210082
210083	DECKERS DAIRY	1947	HIGHTSTOWN BORO	401622	0743104	110.00	240		401622074310402	211MRPA	225.00	240.00	N	W	1947			210083
210084	HIGHTSTOWN W D	HIGHTSTOWN 2	HIGHTSTOWN BORO	401622	0743129	84.00	199		401622074313301	211ODBG	181.00	205.00	P	W	1947			210084
210085	HIGHTSTOWN W D	TEST-3	HIGHTSTOWN BORO	401625	0743131	95.00	336	8.00	401625074313101	211MRPA	316.00	336.00	U	Z	19770310	28-09493	398	210085
210086	HIGHTSTOWN W D	OBS-4	HIGHTSTOWN BORO	401624	0743132	95.00	334	4.00	401625074313102	211MRPA	294.00	334.00	U	Z	19770310	28-09494	365	210086
210087	HOPEWELL BORO W	3-1965	HOPEWELL BORO	402335	0744547	200.00	237	8	402334074460801	231SCKN	60.33	237.00	P	W	19651212	28-05619	237	210087
210088	US GEOLOGICAL SURVEY	HONEY BRANCH 10	HOPEWELL TWP	402128	0744613	179.50	150		402131074461201	231BRCK	20.00	150.00	U	O	1967			210088
210089	SHELL CHEM CO	1972 WELL	LAWRENCE TWP	401654	0744032	70.00	33.0		401654074403801	211MRPA	23.00	33.00	N	W	19720118	28-07427		210089
210090	PENNINGTON WD	PWD 5D	PENNINGTON BORO	402000	0744658	140.00	400		402000074465801	231SCKN			P	W	1967	27-04837		210090
210091	PENNINGTON WD	KING GEORGE 41	PENNINGTON BORO	402001	0744701	180.00	512		402001074470101	231BRCK			P	W	1947	27-04837		210091
210092	CHAMPALE INC	YARD WELL	TRENTON CITY	401152	0744528	27.00	80.0		401152074452801	211FRNG	70.00	80.00	U	U	19610411	28-04078		210092
210093	ROEBLING SONS	1940	TRENTON CITY	401156	0744506	30.00	147		401156074450601	211MRPAM	125.00	147.00	N	W	1940			210093
210094	MARCO PRODUCTS	1-1957	TRENTON CITY	401416	0744449	80.00	160		401416074444901	211MRPA	157.00	160.00	N	W	19571224			210094
210096	POTTS, RICHARD	1-1951	WASHINGTON TWP	401104	0743630	105.00	200		401105074363001	211MRPA					19510816	28-00314		210096
210097	MADAR, ALEX	1-1954	WASHINGTON TWP	401127	0743611	110.00	243		401127074361101	211MRPA	240.00	243.00	H	W	19540125	28-01134		210097
210098	WILSON, GEORGE G	1(REED SOD FRM	WASHINGTON TWP	401147	0743348	120.00	464		401147074334801	211FRNG	434.00	464.00	I	W	19580426	28-02991		210098
210099	ENGLAND, ROBERT	ENGLAND NO 2	WASHINGTON TWP	401159	0743403	118.00	439		401159074340301	211FRNG	404.00	434.00	I	W	19660512			210099
210100	AGANS, FRED	1-1954	WASHINGTON TWP	401221	0743622	115.00	200		401221074362201	211MRPA	197.00	200.00	H	W	19540208	28-01108		210100
210101	PRINCETN MEM PK	MEMORIAL PK 1	WASHINGTON TWP	401238	0743448	135.00	421		401238074344801	211FRNG	366.00	421.00	I	W	19661005	28-06030		210101
210102	MERCER MOBLE HM	1973 WELL	WASHINGTON TWP	401240	0743741	110.00	155		401242074373501	211MRPAU	145.00	155.00	H	W	19731115	28-08171		210102
210103	SUBURBAN NAT GAS	SUBURBAN 1	WASHINGTON TWP	401309	0743702	110.00	186		401309074370201	211MRPAU	183.00	186.00	H	W	19530318	28-00801		210103
210104	GELLER, AL	1953	WASHINGTON TWP	401344	0743236	120.00	248		401344074323601	211MRPAU	245.00	248.00	H	W	19530815	28-00933		210104
210105	PRNCTON TURF FM	1 (HANCOCK)	WASHINGTON TWP	401349	0743219	120.00	280		401349074321901	211MRPA	250.00	280.00	I	W	19560623	28-01912		210105
210106	PATER MOTORS	1-1949	WASHINGTON TWP	401349	0743552	110.00	230		401349074355201	211MRPA	220.00	230.00	H	W	19490328	28-00106		210106
210107	FEDASZ, NICK	1-1953	WASHINGTON TWP	401350	0743400	100.00	230		401350074340001	211MRPA	200.00	230.00	H	W	19531127	28-01052		210107
210108	SCHWARTZ, HARRY	1-1951	WASHINGTON TWP	401411	0743539	105.00	147		401411074353901	211MRPA	143.00	147.00	H	W	19511110	28-00404		210108
210109	CURRY, JOHN C	1-1953	WASHINGTON TWP	401432	0743700	105.0	74.0		401424074365501	211ODBG	71.00	74.00	H	W	19530905	28-00861		210109
210110	DRAKE, FRED N	1-1949	WASHINGTON TWP	401433	0743434	95.00	169		401428074345801	211ODBG	159.00	169.00	H	W	19490226	28-00093		210110
210111	ASTBURY, ALBERT	1-1957	WASHINGTON TWP	401438	0743425	100.00	171		401438074342501	211MRPA	163.00	171.00	H	W	19570517	28-02524		210111
210112	SEFCIK, STEVE	1-1957	WASHINGTON TWP	401448	0743513	95.00	121		401448074351301	211MRPA	118.00	121.00	H	W	19571021	28-02778		210112
210113	MACH LUMBER CO	MACH 1	WASHINGTON TWP	401449	0743423	110.00	160		401449074342301	211MRPA	150.00	160.00	N	W	19700810	28-06926		210113
210113	J H I HOME C&R	MACH 1	WASHINGTON TWP	401449	0743423	110.00	160		401449074342301	211MRPA			N	W				210113
210114	NOBE, GEORGE W	1954	WASHINGTON TWP	401456	0743648	95.00	108		401456074364801	211MRPA	105.00	108.00	H	W	19540725	28-01335		210114
210115	SOLSKI, STANLEY	1956	WEST WINDSOR TWP	401322	0744249	60.00	76.0		401322074424901	211MRPA	73.00	76.00	H	W	19560418	28-02037		210115
210116	CUBBERLY, EDGAR	1-1954	WEST WINDSOR TWP	401443	0743819	85.00	101		401443074381901	211MRPA	98.00	101.00	H	W	19540320	28-01204		210116
210117	HOFLING, AUGUST	HOFLING	WEST WINDSOR TWP	401539	0743836	83.53	21.0		401539074383601	211MRPA			H	W				210117
210118	SAMPSON, OLGA	1954	WEST WINDSOR TWP	401544	0743718	60.00	70.0		401544074371801	111HPPM	66.00	70.00	H	W	19540621	28-01297		210118
210120	ELIZABETHTOWN W	JEFFERSON PK 1	WEST WINDSOR TWP	401555	0743704	80.00	121		401555074370401	211FRNG	96.00	121.00	P	W	19650304	28-05368		210120
210121	FOSTER, HANNA	1958	WEST WINDSOR TWP	401555	0743722	80.00	82.0		401555074372201	211MRPA	79.00	82.00	H	W	19580129	28-02997		210121
210122	ELIZABETHTOWN W	JEFFERSON PK 2	WEST WINDSOR TWP	401554	0743659	75.0	136		401604074365301	211ODBG	75.00	126.00	P	W	19680814	28-06455	145	210122

UNIQUE ID	SITE OWNER	LOCAL ID	MUNICIPALITY	LAT	LON	ALTITUDE	DEPTH	DIAMETER	STATION ID	AQUIFER	SCREENED INTERVAL		W	S	DATE	PERMIT	DEPTH DRILLED	UNIQUE ID
050118	LIPTAK	1	CHESTERFIELD TWP	400752	0743944	114.00	214		400752074394401	211MRPAU	208.00	214.00	H	W	19570619	28-02575		050118
050119	D'ANGELO, WM	WILKENS FARM 1	CHESTERFIELD TWP	400821	0743845	100.00	305		400821074384501	211MRPA			I	W	1961			050119
050120	MARINCAS, JOHN	MARINCAS D-1	CHESTERFIELD TWP	400849	0743758	97.00	208		400849074375801	211MRPA	204.00	208.00	H	W	19541018	28-01448		050120
050121	NJS REFORMATORY	NJSR 4	CHESTERFIELD TWP	400934	0744019	97.00	387		400934074401901	211MRPAM	357.00	387.00	T	W	19511114	28-00249		050121
050122	NJS REFORMATORY	NJSR 5	CHESTERFIELD TWP	400934	0744019	75.00	372		400934074401902	211MRPAM	337.00	367.00	I	W	1964	28-05042		050122
050123	DELA VALLEY W C	DVWC 28	CINNAMINSON TWP	395904	0750009	25.00	262		395904075000901	211MRPAL	226.00	261.00	P	W	19690224	31-05321		050123
050123	NJ WATER CO DEL VAL DIST	DVWC 28	CINNAMINSON TWP	395904	0750009	25.00	262		395904075000901	211MRPAL			P	W				050123
050124	DELA VALLEY W C	STEPHENS DR	CINNAMINSON TWP	395906	0750006	30.00	270		395906075000601	211MRPAL	221.00	267.00	P	W	197002	31-05437		050124
050124	NJ WATER CO DEL VAL DIST	STEPHENS DR	CINNAMINSON TWP	395906	0750006	30.00	270		395906075000601	211MRPAL			P	W				050124
050125	NJ WATER CO	DVWC 10	CINNAMINSON TWP	395929	0745922	77.00	281		395929074592201	211MRPAL	239.00	281.00	P	W	19590910	31-03835		050125
050126	DELA VALLEY W C	DVWC 12-POMONA	CINNAMINSON TWP	395929	0745922	73.00	196		395929074592202	211MRPAM	157.00	165.00	U	U	19610706	31-04276		050126
050126	NJ WATER CO DEL VAL DIST	DVWC 12-POMONA	CINNAMINSON TWP	395929	0745922	73.00	196		395929074592202	211MRPAM	181.00	196.00	U	U				050126
050127	DELA VALLEY W C	RIVERTON 14	CINNAMINSON TWP	395938	0745810	35.00	229		395938074581001	211MRPAM	179.00	229.00	P	W	19640428	31-04697		050127
050127	NJ WATER CO DEL VAL DIST	RIVERTON 14	CINNAMINSON TWP	395938	0745810	35.00	229		395938074581001	211MRPAM			P	W				050127
050128	NJ WATER CO	DVWC 26	CINNAMINSON TWP	395938	0745810	35.00	225		395938074581002	211MRPA			P	W	19640715	31-04733		050128
050129	RIVERTON CLUB	COUNTRY CLUB 2	CINNAMINSON TWP	395945	0750011	60.00	174		395945075001101	211MRPAL			I	W	1967	27-04844		050129
050130	DELA VALLEY W C	RIVERTON 13	CINNAMINSON TWP	400002	0750044	70.00	198		400002075004401	211MRPAL	167.00	198.00	P	W	19630719	31-04576		050130
050130	NJ WATER CO DEL VAL DIST	RIVERTON 13	CINNAMINSON TWP	400002	0750044	70.00	198		400002075004401	211MRPAL			P	W				050130
050131	NJ WATER CO	DVWC 27	CINNAMINSON TWP	400002	0750044	75.00	176		400002075004402	211MRPAL	145.00	176.00	P	W	1965	31-04864		050131
050132	RIVERTON CLUB	COUNTRY CLUB	CINNAMINSON TWP	400012	0750013	30.00	111		400012075001301	211MRPAL	91.00	111.00	I	W	19530313	27-00731		050132
050133	AIR REDUCTION	AIRCO 1	CINNAMINSON TWP	400050	0745849	42.00	160		400050074584901	211MRPA			N	W	1952	25-08484		050133
050134	CINNAMINSON TSA	TEST WELL 68 1	CINNAMINSON TWP	400100	0750035	10.85	100		400053075002801	211MRPAM	24.00	100.00	U	T	1968			050134
050135	HOEGANAES IRON	HOEGANAES	CINNAMINSON TWP	400104	0745859	35.00	134		400055074584501	211MRPAM	119.00	134.00	N	W	19510803	27-00238		050135
050136	TAYLOR, H G	TAYLOR 3	CINNAMINSON TWP	400146	0745932	15.00	25.0		400146074593201	211MRPAM			U	D	1963	27-03907		050136
050137	TAYLOR, H G	TAYLOR 2	CINNAMINSON TWP	400147	0745934	14.00	25.0		400147074593401	211MRPAM			U	D	1963	27-03906		050137
050138	TAYLOR, H G	TAYLOR 1	CINNAMINSON TWP	400148	0745936	15.00	25.0		400148074593601	211MRPAM			U	D	1963	27-03905		050138
050139	HOLIDAY LAKE	DELANCO TWP	DELANCO TWP	400204	0745541	25.00	198		400204074554101	211MRPAL	188.00	198.00	H	W	1958			050139
050140	CHANT, HARRY R	CHANT 1	DELANCO TWP	400244	0745607	25.00	155		400241074554601	211MRPAM	140.00	155.00	I	W	1965	27-04480		050140
050141	PRICE, EDWARD	PRICE	DELANCO TWP	400319	0745636	20.00			400319074563601	211MRPA			H	W				050141
050142	MILLSIDE FARMS	3 1956	DELRAN TWP	400055	0745732	20.00	106		400055074573201	211MRPAM	90.00	106.00	C	W	1956	27-01900		050142
050143	DELA VALLEY W C	DVWC 23	DELRAN TWP	400105	0745734	36.00	176		400105074573401	211MRPAL			P	W	19640304	27-04247		050143
050143	NJ WATER CO DEL VAL DIST	DVWC 23	DELRAN TWP	400105	0745734	36.00	176		400105074573401	211MRPAL			P	W				050143
050144	DELA VALLEY W C	DVWC 24	DELRAN TWP	400105	0745734	30.00	135		400105074573402	211MRPAM	105.00	135.00	P	W	19660413	27-04680		050144
050144	NJ WATER CO DEL VAL DIST	DVWC 24	DELRAN TWP	400105	0745734	30.00	135		400105074573402	211MRPAM			P	W				050144
050145	HOLY CROSS H S	HIGH SCHOOL	DELRAN TWP	400110	0745713	70.00	174		400109074571001	211MRPAM	154.00	174.00	U	T	1958	27-02821		050145
050146	DELA VALLEY W C	DVWC 19	DELRAN TWP	400122	0745807	25.00	130		400122074580701	211MRPAL	89.00	130.00	P	W	19590717	27-03080		050146
050146	NJ WATER CO DEL VAL DIST	DVWC 19	DELRAN TWP	400122	0745807	25.00	130		400122074580701	211MRPAL			P	W				050146
050147	DELA VALLEY W C	FAIRVIEW ST	DELRAN TWP	400126	0745647	83.00	235		400126074564701	211MRPAM	180.00	235.00	P	W	1970	27-05202		050147
050147	NJ WATER CO	FAIRVIEW ST	DELRAN TWP	400126	0745647	83.00	235		400126074564701	211MRPAM			P	W				050147
050148	ATLANTIC RICH	ATLANTIC 1	DELRAN TWP	400139	0745558	20.00	156		400139074555801	211MRPAM	146.00	156.00	C	W	19540611	31-01432		050148
050149	DREDG HAR Y BAS	1	DELRAN TWP	400154	0745835	10.00	80.0		400154074583501	300WSCK			T	W	1947			050149
050150	AMICO SAND	AMICO	DELRAN TWP	400207	0745831	15.00	49.0		400207074583101	211MRPAM	27.00	37.00	N	W	19570415	27-02375		050150
050151	FOOTE, DONALD C	FOOTE D-1	EASTAMPTON TWP	395921	0744419	52.00	160		395921074441901	211EGLS	154.00	160.00	H	W	19540413	32-00132		050151
050152	HAMPTON, JOHN W	HAMPTON D-1	EASTAMPTON TWP	395930	0744539	55.00	160		395930074453901	211EGLS	154.00	160.00	H	W	19551118	32-00214		050152
050153	METHVIN, J A	METHVIN D-1	EASTAMPTON TWP	400019	0744555	39.00	363		400019074455501	211MRPA	352.00	363.00	H	W	19531211	27-01063		050153
050154	EASTAMPTON SCH	EASTAMPTON TWP	EASTAMPTON TWP	400042	0744441	73.00	417		400042074444101	211MRPA	407.00	417.00	H	W	1957			050154
050155	CRAMP, MARTIN C	CRAMP 1	EDGEWATER PARK TWP	400208	0745434	40.00	176		400208074543401	211MRPA			U	Z	1954			050155
050156	JAMAH CORP	CAR WASH 1	EDGEWATER PARK TWP	400249	0745418	35.00	138		400249074541801	211MRPAL	123.00	138.00	C	W	1966	27-04659		050156
050157	BLYLER, EARL R	1	EDGEWATER PARK TWP	400252	0745422	39.00	114		400252074542201	211MRPAM	90.00	114.00	U	U	1950			050157
050158	HEAL, JOHN W	EDGEWATER PK TWP	EDGEWATER PARK TWP	400309	0745432	36.00	135		400309074543201	211MRPAM	107.00	135.00	I	W	1951	27-00195		050158
050159	NJ WATER CO	DVWC 21	EDGEWATER PARK TWP	400313	0745407	43.00	135		400310074531702	211MRPAM	110.00	135.00	U	Z	19501020	27-00179		050159
050160	DELA VALLEY W C	DVWC 22	EDGEWATER PARK TWP	400315	0745408	45.00	123		400315074540801	211MRPAM	102.00	123.00	P	W	19630613	27-04050		050160
050160	NJ WATER CO DEL VAL DIST	DVWC 22	EDGEWATER PARK TWP	400315	0745408	45.00	123		400315074540801	211MRPAM			P	W				050160
050161	DELA VALLEY W C	DVWC 32	EDGEWATER PARK TWP	400318	0745438	40.00	167		400318074543801	211MRPAM	135.00	167.00	P	W	19710204	27-05315		050161
050161	NJ WATER CO DEL VAL DIST	DVWC 32	EDGEWATER PARK TWP	400318	0745438	40.00	167		400318074543801	211MRPAM			P	W				050161
050162	NATIONAL WATERPROOF	EDGEWATER PK TWP	EDGEWATER PARK TWP	400333	0745508	38.00	61.0		400333074550501	211MRPAM	41.00	61.00	N	W	1955	27-01464		050162
050162	DAYMANN CONVERT	EDGEWATER PK TWP	EDGEWATER PARK TWP	400333	0745508	38.00	61.0		400333074550501	211MRPAM			N	W				050162
050163	US ARMY	CONTROL AREA	EVESHAM TWP	395218	0745344	84.00	158		395218074534401	211MLRW	138.00	158.00		U	19500624			050163
050164	EVESHAM M U A	TEST WELL 11	EVESHAM TWP	395233	0745418	110.00	699		395233074541801	211MRPAM	688.00	698.00	U	U	19691212	31-05420		050164
050165	EVESHAM M U A	EMUA 4	EVESHAM TWP	395233	0745418	110.00	500		395233074541802	211MRPAU	464.00	500.00	P	W	19700529	31-05458		050165
050166	INDIAN SPNG G C	ISGC 1	EVESHAM TWP	395246	0745326	60.00	400		395246074532601	211MRPAU	443.00	466.00	I	W				050166
050167	EVESHAM M U A	EMUA 5	EVESHAM TWP	395247	0745157	50.00	555		395247074515701	211MRPAU			P	W	197312	31-07453		050167
050168	EVESHAM M U A	EMUA	EVESHAM TWP	395314	0745502	115.00	212		395314074550201	211EGLS			U	U				050168
050169	EVESHAM M U A	TEST 12-1972	EVESHAM TWP	395322	0745300	50.00	475		395322074530001	211EGLS	455.00	475.00	U	T	19720911	31-06305		050169
050170	EVESHAM M U A	EMUA 1	EVESHAM TWP	395333	0745440	89.00	389		395336074544001	211MRPAU	369.00	389.00	U	Z	19560823	31-02780		050170
050171	EVESHAM M U A	EMUA 2	EVESHAM TWP	395344	0745503	100.00	435		395344074550301	211MRPAU	405.00	435.00	U	Z	1963	31-04584		050171
050172	HOSEL, WILLIAM	1966	EVESHAM TWP	395403	0745601	80.00	341		395403074560101	211MRPA			H	W	1966	31-04967		050172
050173	ROBERTS, BYRON T	B T ROBERTS 2	EVESHAM TWP	395412	0745619	93.00	375		395412074561801	211MRPAU	322.00	375.00	U	W	1957			050173
050173	LINCOLN HOMES	B T ROBERTS 2	EVESHAM TWP	395412	0745619	93.00	375		395412074561801	211MRPAU			U	W				050173
050174	EVESHAM M U A	EMUA 3	EVESHAM TWP	395432	0745709	60.00	334		395430074570601	211MRPAU	291.00	331.00	U	Z	19670612	31-05106		050174
050175	EVESHAM M U A	TEST WELL 5	EVESHAM TWP	395430	0745706	60.00	420		395430074570602	211MRPAM	415.00	420.00	U	T	19661123			050175
050176	EVESHAM M U A	TEST WELL 6	EVESHAM TWP	395430	0745706	60.00	314		395430074570603	211MRPAU	304.00	314.00	U	Z	19670315			050176
050177	STEPAN CHEM CO	SCC 1	FIELDSBORO BORO	400809	0744412	6.00	79.0		400809074441201	211MRPA			U	Z	1960			050177
050178	STEPAN CHEM CO	SCC 2	FIELDSBORO BORO	400815	0744415	6.00	80.0		400815074441501	211MRPA	60.00	80.00	U	Z	19650824	28-05523		050178
050179	D-J CANNULI	CANNULI	FLORENCE TWP	400509	0744822	41.00	93.0		400509074482201	211MRPAU	72.00	92.00	I	W	1955	27-01498		050179
050179	BLUE GRASS LAWN	CANNULI	FLORENCE TWP	400509	0744822	41.00	93.0		400509074482201	211MRPAU			I	W				050179
050180	WORKMAN, JAMES	WORKMAN 1	FLORENCE TWP	400532	0744833	41.00	194		400532074483301	211MRPAM	170.00	194.00	I	W	19510212	27-00204		050180
050181	GRIFFIN PIPE CO	GRIFFIN B	FLORENCE TWP	400722	0744918	28.00	119		400546074483901	211MRPAM	98.00	119.00	N	W	19641214	27-04426		050181
050182	GRIFFIN PIPE CO	GRIFFIN A	FLORENCE TWP	400722	0744918	26.00	113		400550074485501	211MRPAM	92.00	113.00	U	U	19641118	27-04411		050182
050183	HARRIS NURSERY	HARRIS	FLORENCE TWP	400602	0744756	35.00	78.0		400602074475601	211MRPA			I	W	1954			050183
050184	HUNT BROTHERS	CIRCUS	FLORENCE TWP	400606	0744734	42.00	190		400606074473401	211MRPAM			C	W				050184
050185	SHERWATT EQUIP	1	FLORENCE TWP	400650	0744547	15.00	121		400641074461301	211MRPAM	111.00	121.00	N	W	19570310	27-02366		050185
050186	BOGDANY, STEPHEN	BOGDANY	FLORENCE TWP	400651	0744734	50.00	60.0		400651074473401	211MRPA			H	W				050186
050187	FLORENCE TWP WD	FTWD 4	FLORENCE TWP	400703	0744832	30.00	134		400703074483201	211MRPAM	119.00	134.00	P	W	19480825	27-00023		050187
050188	FLORENCE TWP WD	FTWD 3	FLORENCE TWP	400704	0744838	30.00	138		400704074483801	211MRPAM	123.00	138.00	P	W	19481013	27-00022		050188
050189	FLORENCE TWP WD	FTWD 2	FLORENCE TWP	400706	0744930	15.00	120		400707074484501	211MRPAM	104.00	119.00	P	W	19311007	47-00006		050189
050189		FTWD 2	FLORENCE TWP	400706	0744930	15.00	120		400707074484501	211MRPAM	105.00	120.00	P	W				050189
050190	FLORENCE TWP WD	FTWD 1	FLORENCE TWP	400712	0744842	30.00	119		400712074484201	211MRPAM	99.00	119.00	P	W	19310912	47-00005		050190
050192	FRED WORTH-SONS	WORTH	HAINESPORT TWP	395750	0745107	30.00	317		395750074510701	211MRPAU	277.00	317.00	U	Z	1949			050192
050193	FRED WORTH-SONS	WORTH 1	HAINESPORT TWP	395753	0745115	30.00	78.0		395753074511501	211EGLS	66.00	78.00	I	W		31-05072		050193

UNIQUE ID	SITE OWNER	LOCAL ID	MUNICIPALITY	LAT	LON	ALTITUDE	DEPTH	DIAMETER	STATION ID	AQUIFER	SCREENED INTERVAL		W	S	DATE	PERMIT	DEPTH DRILLED	UNIQUE ID
210210	SMITH, C V	1	EWING TWP	401713	0745020	190.00	220		401713074502001	231LCKG					1956			210210
210211	STEELMAN, C H	1	LAWRENCE TWP	401807	0744100	60.00	90.0		401807074410001	231SCKN			I	W	1948			210211
210212	TODD, ESTER	1	PRINCETON BORO	402233	0743807	160.00	175		402233074380701	231BRCK			I	W	19520811			210212
210213	GRAHAM, BERNARD	HAMILTON TWP	HAMILTON TWP	401358	0744005	95.00	82.0	0.00	401358074400501	211FRNG	78.30	82.00	H	W	19530103	28-00762	90.0	210213
210214	AGABITI, FRANK	CEDAR GARDENS	HAMILTON TWP	401357	0744048	85.00	83.0	0.00	401357074404801	300WSCK	73.00	83.00	C	W	19540621	28-01260	317	210214
210215	CACAUIO BROS	HAMILTON TWP	HAMILTON TWP	401228	0744255	65.00	183	0.00	401228074425501	211FRNG			H	W	19550526	28-01551	205	210215
210216	METROPOLIS BREWERY	REPLACEMENT	TRENTON CITY	401153	0744528	27.00	118	0.00	401153074452802	211FRNG	107.50	117.50		W	19560324	27-01988	123	210216
210217	DEMARIO, A	HAMILTON TWP	HAMILTON TWP	401243	0744311	60.00	112	0.00	401243074431101	211FRNG	109.00	112.00	H	W	19560330	28-02041	112	210217
210218	ACME RUBBER CO	HAMILTON TWP	HAMILTON TWP	401400	0743930	100.00	45.5	0.00	401400074393001	211DDBG	34.50	45.50	N	W	19560710	28-02140	60.0	210218
210219	TARKIN, E	HAMILTON TWP	HAMILTON TWP	401118	0744240	80.00	123	0.00	401118074424001	211FRNG	119.00	122.50	H	W	19560711	28-02143	123	210219
210220	NEAR PARA RUBBER CO	2	HAMILTON TWP	401334	0744435	50.00	35.0	0.00	401334074443501	211FRNG	25.00	35.00		T	19590123	28-03048	35.0	210220
210221	PARRISKI, EDWARD	HAMILTON TWP	HAMILTON TWP	401317	0744212	60.00	91.0	0.00	401317074421201	211FRNG	88.00	91.00	H	W	19630312	28-04633	91.0	210221
210222	ST FRANCIS HOSPITAL	1	TRENTON CITY	401258	0744430	54.00	80.0	0.00	401258074443001	211FRNG	60.00	80.00	T	W	19630625	28-04654	103	210222
210223	SNOOK, R E	HAMILTON TWP	HAMILTON TWP	401117	0744211	85.00	124	0.00	401117074421101	211FRNG	118.00	124.00	H	W	19640104	28-04964	124	210223
210224	WEST CONST CO	HAMILTON TWP	HAMILTON TWP	401228	0744143	90.00	97.0	0.00	401228074414301	211FRNG	87.00	97.00	C	W	19640201	28-05010	97.0	210224
210225	VARANYAK, JOSEPH	HAMILTON TWP	HAMILTON TWP	401231	0744159	85.00	96.0	0.00	401231074415901	211FRNG	90.00	96.00	H	W	19640422	28-05081	96.0	210225
210226	GREENWOOD CEMETARY	HAMILTON TWP	HAMILTON TWP	401339	0744307	50.00	51.0	0.00	401339074430701	211FRNG	45.00	51.00	C	W	19650801	28-05565	51.0	210226
210227	ST MARYS CEMETARY	HAMILTON TWP	HAMILTON TWP	401231	0744335	55.00	112	0.00	401231074433501	211FRNG	106.00	112.00	C	W		28-05655	112	210227
210228	ST MARYS CEMETARY	HAMILTON TWP	HAMILTON TWP	401236	0744323	55.00	110	0.00	401236074432301	211FRNG	104.00	110.00	C	W		28-05788	110	210228
210229	HAMILTON TWP POLICE	HAMILTON TWP	HAMILTON TWP	401235	0744135	80.00	109	0.00	401235074413501	211FRNG	104.00	109.00	C	W	19670901	28-06241	109	210229
210230	WALN, AMOS	HAMILTON TWP	HAMILTON TWP	401252	0743936	85.00	100	0.00	401252074393601	211DDBG	98.00	100.00	H	W	19701201	28-07072	100	210230
210231	LOUDEN, GARFIELD	HAMILTON TWP	HAMILTON TWP	401216	0744209	95.00	109	0.00	401216074420901	211DDBG	107.00	109.00	H	W		28-07150	109	210231
210232	TRENTON POLICE DEPT	TRENTON CITY	TRENTON CITY	401331	0744521	55.00	300	0.00	401331074452101	300WSCK			C	W	19711006	28-07326	300	210232
210233	WOJTCZUK, HENRY	HAMILTON TWP	HAMILTON TWP	401126	0744054	50.00	115	0.00	401126074405401	211FRNG	110.00	115.00	H	W	19720901	28-07663	115	210233
210234	SHARP, M	HAMILTON TWP	HAMILTON TWP	401149	0744138	100.0	175	0.00	401404074400701	211FRNG	173.00	175.00	H	W	19760701	28-09204	175	210234
210235	GREENWOOD CEMETARY	HAMILTON TWP	HAMILTON TWP	401336	0744308	60.00	74.0	0.00	401336074430801	211FRNG	64.00	74.00	C	W	19761101	28-09374	75.0	210235
210236	BECKETT, LOUIS	HAMILTON TWP	HAMILTON TWP	401332	0744223	62.0	99.0	0.00	401331074423101	211FRNG	93.00	99.00	H	W	19790901	28-11297	100	210236
210237	WINDERMAN, WAYNE	HAMILTON TWP	HAMILTON TWP	401134	0744201	95.0	150	0.00	401209074425001	211DDBG	142.00	150.00	H	W	19801118	28-11690	150	210237
210238	HAMRAY, CAROLINE	HAMILTON TWP	HAMILTON TWP	401323	0744010	100.00	195	0.00	401323074401001	211FRNG	185.00	195.00	H	W	19820125	28-12528	205	210238
210239	RYBOVIC, EMIL	HAMILTON TWP	HAMILTON TWP	401525	0744244	58.00	150	0.00	401525074424401	300WSCK	39.00	150.00	H	W	19830110	28-13256	150	210239
210240	TAFT, FRED A JR	TAFT DOMESTIC-19	WEST WINDSOR TWP	401842	0743554	85.	76	4.	401843074340501	211FRNG	71.	76.	H	W	19761003	28-00934	76.	210240
210241	US GEOLOGICAL SURVEY	CHAMBERLAIN PK	WEST WINDSOR TWP	401727	0743640	100		6.25	401727074364001				U	T	19850918	28-15613	133	210241
210242	MOBIL RESEARCH LAB	MOBIL RESEARCH 2	HOPEWELL TWP	402040	0744635	155	600	10	402040074463501	231BRCK	50	600	N	W	19801107	27-06942	600	210242
210242		MOBIL RESEARCH 2	HOPEWELL TWP	402040	0744635	155	600	6	402040074463501	231BRCK			N	W			600	210242
210243	HOOPER, HARRY	1-1952	EWING TWP	401628	0744643	120	67	6	401628074464301	231SCKN	42	67	H	W	19520417	27-00471	67	210243
210243	ZAPECZA, OTTO	1-1952	EWING TWP	401628	0744643	120	67		401628074464301	231SCKN			H	W			67	210243
210244	WASHINGTON CROSSING WATER	WASH CROSSING ES	HOPEWELL TWP	401846	0745046	210	235	8	401846074504601	231BRCK	105	235	P	W	19660315	27-04615	235	210244
210244	HOPEWELL TWP MUA	WASH CROSSING ES	HOPEWELL TWP	401846	0745046	210	235		401846074504601	231BRCK			P	W			235	210244
210245	AMERICAN CYANAMID CO	CYAMAMID D-1959	WEST WINDSOR TWP	401756	0744022	85	169	12	401756074402201	231SCKN	33.67	169	S	W	19590610	28-03508	169	210245
210246	AMERICAN CYANAMID CO	T-9	WEST WINDSOR TWP	401746	0744018	85	138	6	401746074401801	231SCKN	64.33	138	S	W	19580711	28-03154	138	210246
210247	PRINCETON WATER COMPANY	HARRISON ST 6	WEST WINDSOR TWP	402022	0743758	60	335	18	402022074375801	231SCKN	38.58	335	P	W	19560125	28-01886	335	210247
210247	ELIZABETHTOWN WATER COMPA	HARRISON ST 6	WEST WINDSOR TWP	402022	0743758	60	335	12	402022074375801	231SCKN			P	W			335	210247
210248	GREEN ACRES COUNTRY CLUB	2-GOLF COURSE	LAWRENCE TWP	401642	0744324	80	408	14	401642074432401	231SCKN	32	408	I	W	19631206	28-04857	408	210248
210248		2-GOLF COURSE	LAWRENCE TWP	401642	0744324	80	408	10	401642074432401	231SCKN			I	W			408	210248
210249	LAWRENCEVILLE SCHOOL	3-GOLF COURSE	LAWRENCE TWP	401747	0744328	100	310	10	401747074432801	231SCKN	50	310	I	W	19780228	28-10153	310	210249
210250	WESTERN ELECTRIC CO INC	RESEARCH LAB 3	HOPEWELL TWP	402142	0744348	205	400	12	402142074434801	231BRCK	31	400	C	W	19600624	28-03870	400	210250
210250	AT&T TECHNOLOGIES	RESEARCH LAB 3	HOPEWELL TWP	402142	0744348	205	400	8	402142074434801	231BRCK			C	W			400	210250
210251	EDUCATIONAL TESTING SERVI	ETS 2 IS NEW ETS	LAWRENCE TWP	402045	0744248	125	223	12	402043074431801	231LCKG	35	223	C	W	19561215	28-02307	223	210251
210251		ETS 2 IS NEW ETS	LAWRENCE TWP	402045	0744248	125	223	8	402043074431801	231LCKG			C	W			223	210251
210252	AMERICAN LEGION POST #339	1-LEGION HALL	HOPEWELL TWP	402252	0744650	260	400	6	402252074465001	231BSLT	60	400	H	W	19820804	27-07233	400	210252
210253	STEFFANELLI, A	REPLACEMENT-81	HOPEWELL TWP	402024	0745103	285	250	6	402024074510301	231BRCK	63	250	H	W	19810700	27-07048	250	210253
210254	DOWNSTOWNS AIRPORT	DUFFY SPRINKLER	WEST WINDSOR TWP	401622	0743520	90	90		401622074352001	211MRPA	80	90	Z	W	19790320		90	210254
210254	DUFFY, BRUCE	DUFFY SPRINKLER	WEST WINDSOR TWP	401622	0743520	90	90		401622074352001	211MRPA			Z	W			90	210254
210255	LEE, RICHARD	DOMESTIC DEEP	EAST WINDSOR TWP	401558	0743351	100	94		401558074335101	211MRPA	88	94	H	W	19651213	28-05705	94	210255
210256	HOPEWELL VALLEY GOLF CLUB	4-HAND PUMP	HOPEWELL TWP	402156	0744700	160	100	10	402156074470001	231BRCK	31	100	C	W	19810603	27-07038	100	210256
210256		4-HAND PUMP	HOPEWELL TWP	402156	0744700	160	100	6	402156074470001	231BRCK			C	W			100	210256
210257	HOPEWELL VALLEY GOLF CLUB	1-STONY BROOK	HOPEWELL TWP	402147	0744703	160	200	10	402147074470301	231BRCK	22	200	C	W	19670714	27-04890	200	210257
210257		1-STONY BROOK	HOPEWELL TWP	402147	0744703	160	200	6	402147074470301	231BRCK			C	W			200	210257
210258	ROGASKI, BRIAN	ROGASKI 1	HOPEWELL TWP	402244	0744642	280	350	6	402244074464201	231BRCK	42	350	H	W	19820324	27-07162	350	210258
210259	MAZIARZ, STAN	MAZIARZ 1	HOPEWELL TWP	402412	0744758	400	250	10	402412074475801	231LCKG	50	250	H	W	19820600	27-07191	250	210259
210259		MAZIARZ 1	HOPEWELL TWP	402412	0744758	400	250	6	402412074475801	231LCKG			H	W			250	210259
210260	CHYUN, YONG-CHOL	CHYUN 1	HOPEWELL TWP	402355	0744726	360	500	6	402355074472601	231LCKG	50	500	H	W	19821118	27-07262	500	210260
210261	RULE, MARVIN	RULE 1	HOPEWELL TWP	402406	0744548	405	277	6	402406074454801	231BRCK	47	277	H	W	19770512	28-09577	277	210261
210262	GURKA, JOHN	GURKA 1	HOPEWELL TWP	402358	0744550	400	135	8	402358074455001	231BRCK	22	135	H	W	19570603	28-02507	135	210262
210262		GURKA 1	HOPEWELL TWP	402358	0744550	400	135	6	402358074455001	231BRCK			H	W			135	210262
210263	HOLCOMBE, JR. RUSSELL	HOLCOMBE 1	HOPEWELL TWP	402406	0744415	200	120	10	402406074441501	231BRCK	51	120	H	W	19771117	28-10058	120	210263
210263		HOLCOMBE 1	HOPEWELL TWP	402406	0744415	200	120	6	402406074441501	231BRCK			H	W			120	210263
210264	OLSWFSKI, ANTHONY	OLSWFSKI 1	HOPEWELL TWP	402243	0744758	240	285	10	402243074475801	231BRCK	51	285	H	W	19740218	27-03819	285	210264
210264		OLSWFSKI 1	HOPEWELL TWP	402243	0744758	240	285	6	402243074475801	231BRCK			H	W			285	210264
210265	ANDERSON, THOMAS	ANDERSON FARM-19	HOPEWELL TWP	402418	0744520	355	275	6	402418074452001	231BRCK	50	275	H	W	19810422	28-11785	275	210265
210266	ST PETERS LUTHERAN CHURCH	CHURCH 1	HOPEWELL TWP	402217	0745050	340	100	10	402217074505001	231LCKG	31	100	T	W	19810312	27-06992	100	210266
210266		CHURCH 1	HOPEWELL TWP	402217	0745050	340	100	6	402217074505001	231LCKG			T	W			100	210266
210267	WESTERN ELECTRIC CO, INC	RESEARCH LAB 1	HOPEWELL TWP	402140	0744340	213.50	400	12	402140074434001	231BRCK	37.5	400	C	W	19600408	28-03764	400	210267
210267	AT&T TECHNOLOGIES	RESEARCH LAB 1	HOPEWELL TWP	402140	0744340	213.50	400	8	402140074434001	231BRCK			C	W			400	210267
210268	SINCLAIR, PAUL	SINCLAIR 1	HOPEWELL TWP	402135	0744940	400	150	6	402135074494001	231SCKN	50	150	H	W	19800813	27-06890	150	210268
210269	PENNINGTON BORO	PENNINGTON WD 6	PENNINGTON BORO	401947	0744750	200	272.5	10	401947074475001	231BRCK	43.33	272.5	P	W	19571113	27-02563	272.5	210269
210270	EDUCATIONAL TESTING SERVI	ETS 3	LAWRENCE TWP	402045	0744257	160	281.5	12	402045074425701	231BRCK	31.67	281.5	C	W	19570204	28-02308	281.5	210270
210270		ETS 3	LAWRENCE TWP	402045	0744257	160	281.5	8	402045074425701	231BRCK			C	W			281.5	210270
210271	RADIO CORPORATION OF AMER	SARNOFF LAB 6	WEST WINDSOR TWP	402008	0743740	60	300	10	402008074374001	231SCKN	60	300	C	W	19721017	28-07735	300	210271
210272	LAWRENCEVILLE SCHOOL	WELL-1882	LAWRENCE TWP	401733	0744348	100	110	4	401733074434801	231SCKN	20.33	110	U	Z	18820000	48-00014	110	210272
210273	GREEN ACRES COUNTRY CLUB	1-1946	LAWRENCE TWP	401658	0744338	100	204	8	401658074433801	231SCKN	32	204	C	W	19460422	48-00096	204	210273
210274	ELLIS, WILLIAM	ELLIS-1960	LAWRENCE TWP	401938	0744300	200	90	8	401938074430001	231LCKG	28	90	H	W	19601209	28-04032	90	210274
210274		ELLIS-1960	LAWRENCE TWP	401938	0744300	200	90	6	401938074430001	231LCKG			H	W			90	210274
210275	PENNINGTON BORO	WD 7	PENNINGTON BORO	401905	0744736	200	300	14	401905074473601	231BRCK	81.21	300	P	W	19631213	27-04196	300	210275
210275		WD 7	PENNINGTON BORO	401905	0744736	200	300	10	401905074473601	231BRCK			P	W			300	210275
210276	VAN NOTE, SHEILA	1-1985	HOPEWELL TWP	401835	0744604	215	233	6	401835074460401	231BRCK	50	233	H	W	19850401	27-07908	233	210276
210277	HOPEWELL BORO	4-LOUELLEN ST	HOPEWELL BORO	402314	0744611	200	380	8	402314074461101	231BRCK	50	380	P	W	19680412	27-04973	380	210277
210278	LEE, RICHARD	DOMESTIC-SHALLOW	EAST WINDSOR TWP	401558	0743351	100	17		401558074335102	211MRPA			H	W				210278
210279	JANEY, STEVEN	DOMESTIC 1	WEST WINDSOR TWP	401502	0743609	75	75		401502074360901	211MRPA			H	W	19770927			210279
210280		DOMESTIC	WEST WINDSOR TWP	401623	0743517	90	80		401623074351701	211MRPA			H	W				210280

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UNIQUE ID	SITE OWNER	LOCAL ID	MUNICIPALITY	LAT	LON	ALTITUDE	DEPTH	DIAMETER	STATION ID	AQUIFER	SCREENED INTERVAL		W	S	DATE	PERMIT	DEPTH DRILLED	UNIQUE ID
210123	GROVER, LEROY	1	WEST WINDSOR TWP	401634	0743544	90.00	91.0		401634074354401	211MRPA	70.00	91.00	I	W	19550518	28-01498		210123
210124	GROVER, S D	1957	WEST WINDSOR TWP	401635	0743831	90.00	62.0		401635074383101	211FRNG	59.00	62.00	H	W	19571105	28-02879		210124
210125	SCHENCK&SONS,W.	1	WEST WINDSOR TWP	401646	0743521	35.00	92.0		401646074352101	211MRPA	62.00	82.00	I	W	19550124	28-01377		210125
210126	TINDALL, GORDON	1955	WEST WINDSOR TWP	401652	0743628	100.00	70.0		401652074362801	211MRPA	20.00	70.00	I	W	19550303	28-01515		210126
210127	REED SOD FARM	1953-HOLMAN	WEST WINDSOR TWP	401712	0743640	100.00	68.0		401712074364001	211MRPA	18.00	68.00	I	W	19530222	28-00756		210127
210128	REED SOD FARM	1971	WEST WINDSOR TWP	401715	0743636	100.00	70.0		401715074363601	211MRPA	60.00	70.00	I	W	1971	28-07243A		210128
210129	SUN OIL CO	DELUCA	WEST WINDSOR TWP	401744	0743541		66.0		401744074354101	211MRPA	55.00	65.00	H	W	19700528	28-06861		210129
210130	DRUMAND, ALEX	E HAHN 1	WEST WINDSOR TWP	401902	0743630	90.00	95.0		401844074354301	211FRNG	92.00	95.00	H	W	1956	28-03045		210130
210131	MULLRONAY	MULRONAY BARN	WEST WINDSOR TWP	401914	0743825	80.00	15.0		401914074382501	112CPMY			U	D				210131
210132	BELL TELE CO	BELL LAB 4	WEST WINDSOR TWP	401935	0743836	103.00	200		401935074383601	231BRCK	42.00	200.00	N	W	1968			210132
210133	AMERICAN CYANAMID CO	NEW A	WEST WINDSOR TWP	401744	0744006	75.00	47.5	17.00	401744074400601	111HPPM	36.83	47.33	N	W	19670925	28-06215		210133
210133		NEW A	WEST WINDSOR TWP	401744	0744006	75.00	47.5		401744074400601	111HPPM	37.00	47.00	N	W				210133
210134	WEST WINDSOR WATER COMPAN	WWT TEST C	WEST WINDSOR TWP	401535	0743703	65.00	164	6.00	401535074370304	211MRPA	154.00	164.00	U	T	19670320	28-06117	183	210134
210135	WEST WINDSOR WATER COMPAN	WEST WINDSOR TWP	WEST WINDSOR TWP	401535	0743703	65.00	112	6.00	401535074370303	211MRPA	102.00	112.00	U	T	19661101	28-06008	230	210135
210136	WILDERSMITH, J	WEST WINDSOR TWP	WEST WINDSOR TWP	401935	0743821	100.00	252	9.00	401935074382101	231SCKN	48.00	252.00	P	W	19600921		252	210136
210137	RADIO CORPORATION OF AMER	EAST WINDSOR TWP	EAST WINDSOR TWP	401945	0743733	60.00	300	14.75	401945074373301	231SCKN	125.00	300.00	N	W	19670810	28-06196	300	210137
210138	RADIO CORPORATION OF AMER	EAST WINDSOR TWP	EAST WINDSOR TWP	401718	0743335	90.00	287	14.00	401718074333501	300WSCK			N	W	19750501			210138
210139	RADIO CORPORATION OF AMER	EAST WINDSOR TWP	EAST WINDSOR TWP	401718	0743334	90.00	400	12.00	401718074333401	300WSCK	37.00	400.00	N	W	19611227	28-04276	400	210139
210140	RADIO CORPORATION OF AMER	EAST WINDSOR TWP	EAST WINDSOR TWP	401716	0743336	90.00	436	10.00	401716074333601	300WSCK	35.00	435.75	N	W	19551001	28-01743	436	210140
210141	BELL TELE CO	WEST WINDSOR TWP	WEST WINDSOR TWP	401906	0743824	95.00	200	8.00	401906074382401	231SCKN	42.00	200.00	N	W	19681101	28-06511	200	210141
210142	WEST WINDSOR WATER COMPAN	WEST WINDSOR TWP	WEST WINDSOR TWP	401535	0743703	65.00		14.00	401535074370302	300WSCK	170.00	400.00	P	W	19650901	28-05321	400	210142
210143	CONOVER DAIRY	EAST WINDSOR TWP	EAST WINDSOR TWP	401458	0743152	140.00			401458074315202	211ODBG			U	Z				210143
210144	HIGHTSTOWN W D	OBS FOR T3	HIGHTSTOWN BORO	401622	0743130	100	200		401622074313001	211ODBG			U	O	197703			210144
210145	KENTILE CO	EAST WINDSOR TWP	EAST WINDSOR TWP	401717	0743352	100.00	215	10.00	401717074335202	211FRNG	206.00	226.00	H	W	19540727			210145
210145	CARTER WALLACE	EAST WINDSOR TWP	EAST WINDSOR TWP	401717	0743352	100.00	215		401717074335202	211FRNG	205.00	215.00	H	W				210145
210146	LAWRENCEVILLE WC	LAW 6-1975	LAWRENCE TWP	401721	0744410	125.00	500	10.00	401721074441101	231SCKN	50.00	500.00	U	T	19750905	28-08874	500	210146
210146		LAW 6-1975	LAWRENCE TWP	401721	0744410	125.00	500	8.00	401721074441101	231SCKN			U	T			500	210146
210147	PUBLIC SERV E-G	PSEG 1	HAMILTON TWP —	401026	0744344	10.00	63.0	14.00	401026074434401	211MRPAF	43.00	63.00	N	W	19770502	28-09524	73.0	210147
210148	PUBLIC SERV E-G	PSEG 2	HAMILTON TWP —	401026	0744344	10.00	60.0	14.00	401026074434402	211MRPA	38.00	60.00	N	W	19770405	28-09525	73.0	210148
210150	STOKELY VAN CAMP	1	TRENTON CITY	401158	0744504	40.00			401158074450401	211MRPA			N	W			404	210150
210151	HULSE	HOUSE WELL	HAMILTON TWP	401019	0743729	80.00	170		401019074372901	211MRPA			H	W				210151
210152	WEST WINDSOR WATER COMPAN	2-1968	WEST WINDSOR TWP	401554	0743704	70.00	145		401554074370401	211ODBG			P	W				210152
210153	GAUM, E	OW 1	HAMILTON TWP	401231	0743752	100.00	230		401231074375201	211MRPA			U	O				210153
210154	MCINTYRE, J R	DOM WELL	WASHINGTON TWP	401306	0743622	90.00	275		401306074362201	211MRPA			H	W				210154
210155	E WINDSOR MUA	TEST 1966	EAST WINDSOR TWP	401606	0743356	100.00	253		401606074335601	211MRPA			U	T				210155
210156	NL INDUSTRIES	1	EAST WINDSOR TWP	401642	0742956	100.00	255		401642074295601	211MRPA			N	W				210156
210157	CYPRUS MINES	PROD 1	EWING TWP	401716	0744831	180.00	251		401716074483101	231BRCK			N	W				210157
210158	COLONIAL PARK WC	1	WEST WINDSOR TWP	401743	0743913	90.00	283	10.00	401743074391301	231BRCK	249.00	283.00	P	W	19581213	28-03067	283	210158
210159	BRISTOL MYERS CO	GROSS WELL	HOPEWELL TWP	401817	0745050	170.00	720		401817074505002	231BRCK			N	W				210159
210160	GRADE SCHOOL	STOTHOFF 1	HOPEWELL TWP	401817	0745050	180.00	300		401817074505001	231BRCK			T	W				210160
210161	HOPEWELL TWP BD ED	1	HOPEWELL TWP	401930	0744903	220.00	304		401930074490301	231BRCK			T	W				210161
210162	AMERICAN CYANAMID CO	4	WEST WINDSOR TWP	401945	0743826	80.00	248		401945074382601	231BRCK			N	W				210162
210163	HILLTOP ESTATES	SUPPLY	PRINCETON TWP	401955	0744118	150.00	230		401955074411801	231BRCK			P	W				210163
210164	RCA RESEARCH	4	WEST WINDSOR TWP	402004	0743735	75.00	386		402004074373501	231BRCK			N	W				210164
210165	PRINCETON WATER COMPANY	3	WEST WINDSOR TWP	402022	0743800	50.00	301	16.00	402022074380001	231BRCK	29.00	175.00	P	W	19290514		301	210165
210165		3	WEST WINDSOR TWP	402022	0743800	50.00	301		402022074380001	231BRCK	175.00	301.00	P	W			301	210165
210166	BOLANE FARMS INC	TEST 1	PENNINGTON BORO	402107	0744930	290.00	375		402107074493001	231BRCK			U	T				210166
210167	BOLANE FARMS INC	TEST 2	PENNINGTON BORO	402110	0744933	270.00	310		402110074493301	231BRCK			U	T				210167
210168	LANE FARMS INC	HOUSE WELL	PENNINGTON BORO	402111	0744927	280.00	395		402111074492701	231BRCK			H	W				210168
210169	WARGO FARM	DOMESTIC	HOPEWELL TWP	402122	0744553	180.00	240		402122074455301	231BRCK			H	W				210169
210170	RESEARCH FARM	5	HOPEWELL TWP	402123	0744605	180.00	150		402123074460501	231BRCK			I	W				210170
210171	RESEARCH FARM	3	HOPEWELL TWP	402126	0744601	180.00	150		402126074460101	231BRCK			I	W				210171
210172	RESEARCH FARM	1	HOPEWELL TWP	402126	0744605	180.00	153		402126074460501	231BRCK			I	W				210172
210173	RESEARCH FARM	2	HOPEWELL TWP	402127	0744609	180.00	150		402127074460901	231BRCK			I	W				210173
210174	RESEARCH FARM	7	HOPEWELL TWP	402128	0744557	180.00	150		402128074455701	231BRCK			I	W				210174
210175	RESEARCH FARM	4	HOPEWELL TWP	402128	0744603	180.00	160		402128074460301	231BRCK			I	W				210175
210176	RESEARCH FARM	6	HOPEWELL TWP	402128	0744606	180.00	200		402128074460601	231BRCK			I	W				210176
210177	RESEARCH FARM	12	HOPEWELL TWP	402130	0744551	170.00	150		402130074455101	231BRCK			I	W				210177
210178	RESEARCH FARM	11	HOPEWELL TWP	402130	0744609	180.00	150		402130074460901	231BRCK			I	W				210178
210179	ELIZABETHTOWN W	GROVER AVE	PRINCETON TWP	402140	0743900	140.00	439		402140074390001	231BRCK			P	W		28-02607		210179
210180	PRINCETON WATER COMPANY	TEST 1	PRINCETON TWP	402140	0743901	140.00	176		402140074390101	231BRCK			U	T				210180
210181	PRNCTN SHOPCNTR	2	PRINCETON TWP	402140	0743902	140.00	508		402140074390201	231BRCK			C	W		28-00648		210181
210182	PRINCETON WATER COMPANY	CLARK TEST	PRINCETON TWP	402142	0744032	120.00	380		402142074403201	231BRCK			U	T				210182
210183	ELIZABETHTOWN W	TURHUME RD	PRINCETON TWP	402203	0743921	170.00	480		402203074392101	231BRCK			P	W				210183
210184	ELIZABETHTOWN W	PRETTY BRK	PRINCETON TWP	402209	0743936	200.00	530		402209074393601	231BRCK			P	W				210184
210185	LEISNER MRS	DOMESTIC	PRINCETON TWP	402249	0744153	260.00	89.0		402249074415301	231BRCK	316.00	336.00	H	W				210185
210186	MURSKI	HOUSE WELL	HAMILTON TWP	401520	0744250	55.00	165		401520074425001	211MRPA								210186
210187	HAMPTON HILL WC	1	EWING TWP	401647	0744633	170.00	250		401647074463301	231LCKG					19550910			210187
210188	LAWRENCEVILLE WC	LAW 4	LAWRENCE TWP	401742	0744410	120	286.50	12	401740074440701	231SCKN	23.50	154	P	W			286.50	210188
210188		LAW 4	LAWRENCE TWP	401742	0744410	120	286.50	8	401740074440701	231SCKN			P	W	19511130		286.50	210188
210189	HOPEWELL BORO WC	WELL 1	HOPEWELL TWP	402340	0744553	220.00	250		402340074455301	231SCKN			P	W		48-00016		210189
210190	EWING WSC	1	EWING TWP	401527	0744700	120.00	200		401527074470001	231SCKN			P	W				210190
210191	CRESTMONT PK WC	1	EWING TWP	401540	0744647	120.00	180		401540074464701	231SCKN			P	W				210191
210192	HILLWOOD MANOR WC	1	EWING TWP	401620	0744607	120.00	165		401620074460701	231SCKN			P	W				210192
210193	NJ STATE HOSP	8	TRENTON CITY	401433	0744820	130.00	372		401433074482001	231SCKN			P	W	1943			210193
210194	LAWRENCEVILLE WC	LAW 5	LAWRENCE TWP	401740	0744407	120.00	110		401740074440702	231SCKN			P	W	1931			210194
210195	MCLEAN ENG CO	1	WEST WINDSOR TWP	401913	0743740	60.00	393	10.00	401913074374001	231SCKN					1953			210195
210196	PRINCETON JUNC WD	2	WEST WINDSOR TWP	401833	0743740	110.00	306	8.00	401833074374001	300WSCK			P	W	1938			210196
210197	PRINCETON JUNC WD	3	WEST WINDSOR TWP	401847	0743727	110.00	312	8.00	401847074372701	300WSCK			P	W	1955			210197
210198	PRINCETON WATER COMPANY	8	PRINCETON BORO	401927	0743927	60.00	301	14.00	401927074392701	231SCKN					19290808			210198
210199	PRINCETON WATER COMPANY	7	PRINCETON BORO	401940	0743927	50.00	294	0.00	401940074392701	231SCKN			P	W	1925			210199
210200	PENNINGTON WD	PWD 3	PENNINGTON BORO	401940	0744753	200.00	657	0.00	401940074475301	231BRCK			P	W	1927			210200
210202	GARDEN STATE WC	HAMILTON 6	HAMILTON TWP	401353	0743953	100.00	228		401353074395301	211MRPAM			P	W				210202
210203	PEOPLES BREWING	1	TRENTON CITY	401153	0744527	27.00	90.0		401153074452701	211MRPAM			N	W				210203
210205	PRINCETON WATER COMPANY	HARRISON ST 1	WEST WINDSOR TWP	402029	0743816	60.00	503	16	402020074380701	231SCKN	35	503	P	W	19290000	48-00005	503	210205
210205	ELIZABETHTOWN WATER CO	HARRISON ST 1	WEST WINDSOR TWP	402029	0743816	60.00	503		402020074380701	231SCKN			P	W			503	210205
210206	BUXTON DAIRY	1	LAWRENCE TWP	401753	0744447	190.00	250	10.00	401753074444701	231LCKG			N	W	1948			210206
210207	HAND, WILLIAM	HAND 1	WEST WINDSOR TWP	401607	0743553	100.00	95.0	8.00	401607074355301	211MRPAM			I	W	1930			210207
210208	HAND, WILLIAM	2	WEST WINDSOR TWP	401620	0743540	100.00	27.0	4.00	401620074354001	112PNSK			I	W	195710			210208
210209	R B POWER	1	HOPEWELL TWP	401913	0745127	260.00	160	8.00	401913074512701	231BRCK					1953			210209

SELECTED INFORMATION OF WELLS FROM THE GROUND WATER SITE INVENTORY DATABASE
MERCER COUNTY

USGS UNIQUE ID	SITE ID	LATITU	LONGTU	MUNICIPALITY	SITE OWNER	LOCAL IDENTIFIER	DATE COMPLETED	USE OF SITE	ORIG WATER USE	CURR WATER USE	LAT LON ACC
210045	401115074420801	401115	744208	HAMILTON TWP	BORDENTOWN W D	4	05/14/1975	W	F	P	F
210046	401119074381001	401119	743810	HAMILTON TWP	CHRYANOWSKI,L S	1-1957	07/16/1957	W	H	H	S
210047	401122074422101	401122	744221	HAMILTON TWP	AGABITI, A	1-1958	05/24/1958	W	H	H	S
210048	401126074385801	401126	743858	HAMILTON TWP	BUCKLEY, FRANK	1-1953	10/21/1953	W	H	H	S
210049	401159074414901	401159	744149	HAMILTON TWP	EMIL B	EMIL 1	05/03/1957	W	H	H	M
210050	401229074413901	401229	744139	HAMILTON TWP	WARD, TERRY F	1957	08/29/1957	W	H	H	S
210051	401231074414101	401231	744141	HAMILTON TWP	SESINI, V W	1952	04/19/1952	W	H	H	S
210052	401242074422401	401242	744224	HAMILTON TWP	PLAVCHAK,EDWARD	1958	05/20/1958	W	H	H	S
210053	401248074394001	401248	743940	HAMILTON TWP	LOTTO, KOKESH	1957	10/11/1957	W	H	H	S
210054	401318074390401	401305	743921	HAMILTON TWP	* GARDEN STATE WC	ROBRT FROST 10	01/01/1962	W	P	P	S
210055	401319074382301	401319	743823	HAMILTON TWP	CUBBERLEY,EDITH	1953	09/03/1953	W	H	H	S
210056	401319074421301	401319	744213	HAMILTON TWP	AGINS, WILBUR	1956	04/04/1956	W	H	H	S
210057	401324074391001	401324	743910	HAMILTON TWP	BARTON FRANCIS	1952	01/01/1952	W	H	H	S
210058	401325074411201	401325	744112	HAMILTON TWP	VARAMJAK STEP	1953	03/18/1953	W	H	H	S
210059	401329074420501	401329	744205	HAMILTON TWP	HUTCHINSON, ROB	1953	11/27/1953	W	H	H	S
210060	401340074395701	401340	743957	HAMILTON TWP	LOCKWOOD JOH E	1958	02/20/1958	W	H	H	S
210061	401352074395101	401352	743951	HAMILTON TWP	Z ~~GARDEN STATE WC~~	HAMILTON 3	01/01/1954	Z	P	U	T
210062	401353074395101	401353	743951	HAMILTON TWP	* GARDEN STATE WC	PARK AVENUE 11	06/06/1969	W	P	P	S
210063	401353074395201	401353	743952	HAMILTON TWP	Z ~~GARDEN STATE WC~~	PARK AVENUE 4	09/10/1949	Z	P	U	F
210064	401353074395202	401353	743952	HAMILTON TWP	Z ~~GARDEN STATE WC~~	PARK AVE 3	01/01/1949	Z	P	U	
210065	401353074395203	401353	743952	HAMILTON TWP	Z ~~GARDEN STATE WC~~	PARK AVE 6	01/01/1954	Z	P	U	
210066	401354074411401	401354	744114	HAMILTON TWP	GIOVENELLI, D J	1-1955	09/18/1955	W	H	H	S
210067	401357074393001	401357	743930	HAMILTON TWP	MERCER RUBER CO	1954-2	11/22/1954	W	I	I	M
210068	401357074400601	401357	744006	HAMILTON TWP	Z ~~GARDEN STATE WC~~	PAXSON AVE 5	01/01/1954	Z	P	U	S
210069	401402074394201	401402	743942	HAMILTON TWP	Z ~~GARDEN STATE WC~~	HAMILTON 5	03/30/1956	Z		U	M
210070	401410074390301	401410	743903	HAMILTON TWP	Z ~~GARDEN STATE WC~~	(HAM SQ WC) 8	01/01/1958	Z	P	U	F
210071	401411074395601	401411	743936	HAMILTON TWP	JENKINS, HERB N	1954	05/04/1954	W	H	H	S
210072	401415074385501	401415	743855	HAMILTON TWP	KELLY, JAMES H	1952	05/20/1952	W	H	H	S
210073	401419074400701	401419	744007	HAMILTON TWP	* GARDEN STATE WC	PAXSON AVE 9	02/06/1958	W	P	P	F
210074	401419074424401	401419	744244	HAMILTON TWP	LAPP, ELEANOR	1953 WELL	01/01/1953	W	H	H	S
210075	401420074400201	401420	744002	HAMILTON TWP	Z → ~~GARDEN STATE WC~~	PAXSON AVE 12	01/01/1974	Z	P	U	S
210076	401423074411501	401423	744115	HAMILTON TWP	SCHULER, H E	SCHULER	05/12/1954	W	H	H	S
210077	401455074410001	401455	744100	HAMILTON TWP	MER CONTRACT CO	1955	05/05/1955	W	H	H	S
210078	401459074393501	401459	743935	HAMILTON TWP	SPRINGSTEEN GEO	1953	08/27/1953	W	H	H	S
210079	401618074292901	401618	742929	HAMILTON TWP	PROBASCO, C B	1954	01/01/1954	W	H	H	S
210080	401558074320001	401558	743200	HIGHTSTOWN BORO	COCA-COLA CO	COCA-COLA 1972	07/28/1972	W	N	N	M
210081	401621074313401	401621	743130	HIGHTSTOWN BORO	HIGHTSTOWN W D	HIGHTSTOWN 1	01/01/1946	W	P	P	S
210082	401622074310401	401622	743104	HIGHTSTOWN BORO	DECKERS DAIRY	1929	01/01/1929	W	N	N	F
210083	401622074310402	401622	743104	HIGHTSTOWN BORO	DECKERS DAIRY	1947	01/01/1947	W	N	N	F
210084	401622074313301	401622	743129	HIGHTSTOWN BORO	HIGHTSTOWN W D	HIGHTSTOWN 2	01/01/1947	W	P	P	S
210085	401625074313101	401625	743131	HIGHTSTOWN BORO	HIGHTSTOWN W D	TEST-3	03/10/1977	Z	U	U	S
210086	401625074313102	401624	743132	HIGHTSTOWN BORO	HIGHTSTOWN W D	OBS-4	03/10/1977	Z	U	U	S
210087	402334074460801	402334	744608	HOPEWELL BORO	HOPEWELL BORO W	R	12/12/1965	W	P	P	M

REFERENCE NO. 19

NUS CORPORATION AND SUBSIDIARIES **TELECON NOTE**

CONTROL NO:	DATE:	TIME:
02-9005-07	July 11, 1991	15:15

DISTRIBUTION:

BETWEEN:	OF:	PHONE:
Jo Hanson	Monsanto Co.	(314) 694-6127

AND: Anthony Bonasera

DISCUSSION:

I called Jo Hanson for additional information on the site history of Monsanto Co. She informed me that cooling water was pumped from a cooling tower and returned to a pit (hot well) in a cycle process: the water ran over grates ~~to~~ AB and was cooled, then pumped through equipment and returned through gravity to the hot well, and was sucked up to the cooling tower to run back down again.

She stated also that the above ground container (tank) that was used to collect waste oil was removed when Monsanto sold the property and discontinued operation.

ACTION ITEMS:

Anthony Bonasera 7/11/91

NUS 067 REVISED 0685

REFERENCE NO. 20

NUS CORPORATION AND SUBSIDIARIES	**TELECON NOTE**

CONTROL NO: D2-9005-07	DATE: July 12, 1991	TIME: 1430

DISTRIBUTION:

BETWEEN: Ata Bonna	OF: Hamilton Twp Engineering Dept.	PHONE: (609) 890-3636

AND: Anthony Bonasera

DISCUSSION: Spoke with Ata Bonna about population recieving groundwater. He stated that approximately 33,457 people are served by public wells. Two out of four public wells are located outside of Monsanto Company's 4-mile radius. Within the 4-miles approximately 16,500 people are served by groundwater. Mr. Bonna further said that storm water runs off into many separate channels, finally to be distributed to surface waters. He did not know the specific runoff path for Monsanto's storm drain.

ACTION ITEMS:

Anthony Bonasera 7/12/91

NUS 087 REVISED 0685

REFERENCE NO. 21

NUS CORPORATION
SUPERFUND DIVISION

PROJECT NOTES

TO: Project File

DATE: July 22, 1991

FROM: Anthony Bonasera

COPIES:

SUBJECT: Calculations of Population on groundwater in

REFERENCE: 4 - mile Radius

See attached Chart *

* Information obtained from references 18 and 20

	Public wells	Domestic wells	Receiving Population from public wells	Receiving Population from domestic wells	Total Receiving Population
0-1/4 Mile					
1/4-1/2 Mile	1			4	4
1/2-1 Mile					
1-2 Miles	1	7	8,250	27	8,277
2-3 Miles	1	19	8,250	72	8,322
3-4 Miles		15		57	57

Note: Receiving population from domestic wells was calculated by multiplying the number of wells by 3.8. The exact population served by each public well is unknown. The total population on public supply was divided equally.